

V1.3.3.3

2025-09-25

1. Fix some bugs in ST programming.
2. Modify the help document, add instructions for some new features.

V1.3.3.0

2025-05-19

1. When creating a new subroutine, PLC models that support subroutines in C/ST language will have additional options of 'Native C' and 'ST'. Models that do not support C/ST language will not have these two options when creating a new subroutine.
2. Added SR-22 series models.

V1.3.2.9

2025-04-21

1. Added 'Print' function under 'File' menu.
2. Added ST programming language. Only models that support C language version support ST language.

V1.3.2.7

2025-03-13

1. Fixed the bug that PR-26DC-DAI-RA-N offline simulation failed.

2025-02-18

1. Fixed the bug that when the PC has multiple network cards, the 'Network Search' in the toolbar cannot find the IP when searching for the PLC IP. You need to select the correct network card before searching.
2. Fixed the bug that xLadder crashes when uploading PLC program.
3. Fixed the issue that PR-23DC-PTDAI-RT-4G does not support SMS menu.

V1.3.2.5

2025-02-11

1. Fixed the bug that the read/write RTC menu does not work.
2. Fixed the bug that the baud rate of COM0 is not saved when changing it under 'System Block'.
3. The 'SMS' menu in the menu bar will only appear when 4G PLC is selected. And fixed the bug that it cannot be used.

V1.3.2.3

2024-12-06

1. Added SR-12 series PLC models. SR-12 series supports ladder programming. You need

- to use the corresponding update package to update SR-12 to ladder mode.
2. Modify the storage mode of the communication parameters in 'Communication'. It will save the parameters set last time and will not change until the next time you modify them.

V1.3.2.1

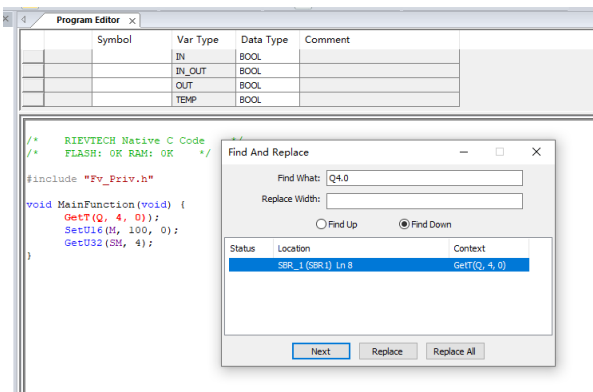
2024-09-05

1. Fixed the bug that after PLC restart, the rand() function in the C language subroutine does not work properly and causes PLC restart.

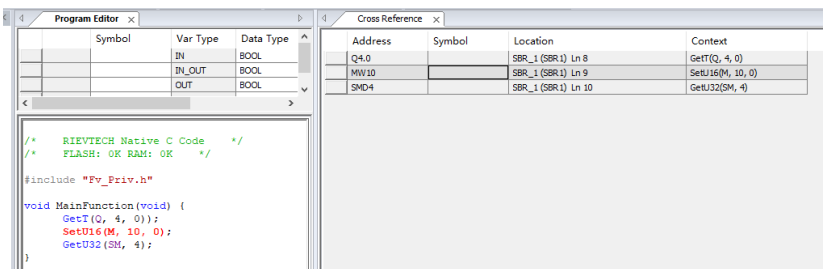
V1.3.1.7

2024-05-23

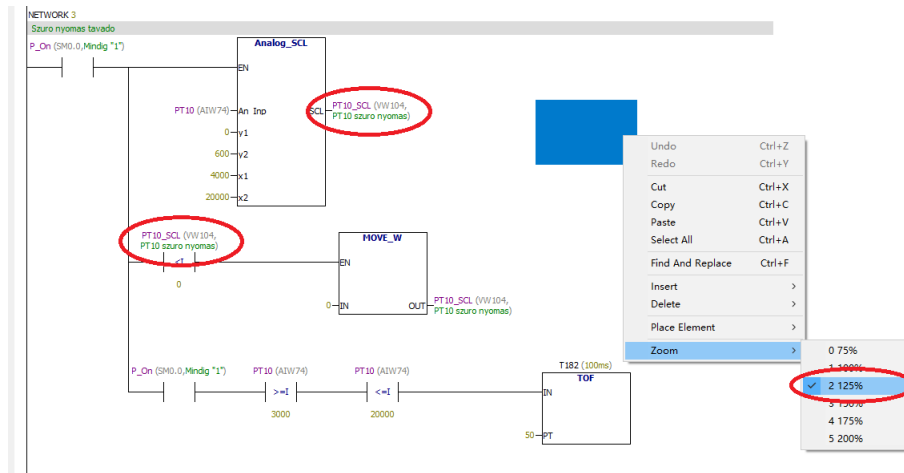
1. xLadder is added to determine whether the PLC supports C language function. If C language is used, but the PLC or the firmware version of the PLC does not support it, an unsupported dialog box will pop up and the download will be terminated.
2. Search function added to C language program. Variables and variable offsets in C language can be statically analyzed, then the variable can be found in the search dialog box, and the variable can be located by double-clicking the mouse. Variable substitution operations are not supported.



3. Variables and variable offsets in C language can be statically analyzed, then the variable can be seen in the cross-reference and can be located by double-clicking the mouse.



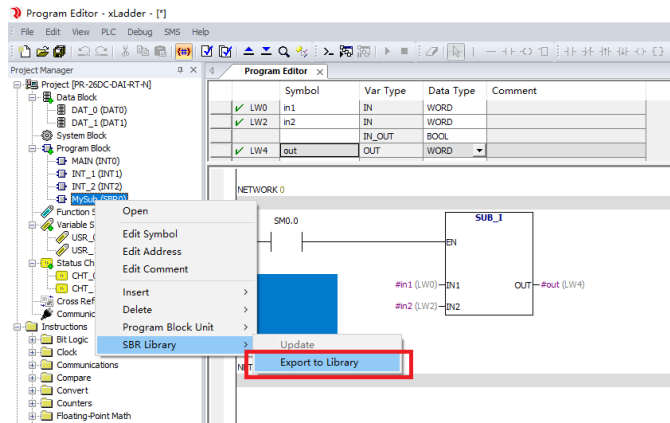
4. When displayed at 100% zoom, only one line can still be displayed.
If adjusted to 125% zoom display:



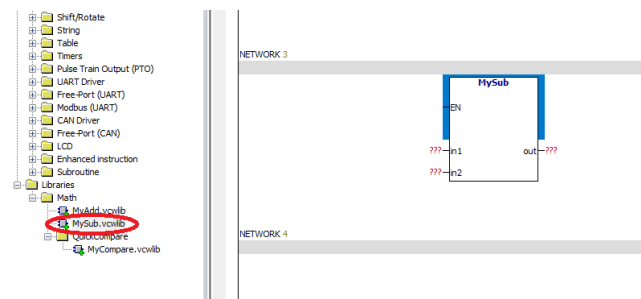
1/3 of the unit height can just display two lines.

After modification, if the display area is not wide enough and high enough to display multiple lines, the text will be segmented for multi-line display.

5. The created subroutine can be exported into a library file, as shown below:



A 'Libraries' folder has been added to the xLadder software. If the exported vcwlib file is already in this folder (in the root directory or subdirectory), the vcwlib file can be scanned when the program starts or manually updated, and it is available as a callable library directive. Double-click this library instruction and it will be automatically added to the project and placed in the program editing area.



V1.3.1.5

2024-04-30

1. Fix the bug that the 'IB' string is not supported in the 'Symbol' column.

V1.3.1.4

2024-03-29

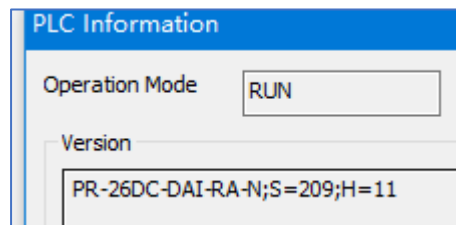
1. Fix some bugs in 'Set AQ Parameter'.
2. Modify the program compilation C language subroutine mechanism. If there is no C language subroutine in the program, the C language compilation function will not be called.

V1.3.1.3

2024-03-04

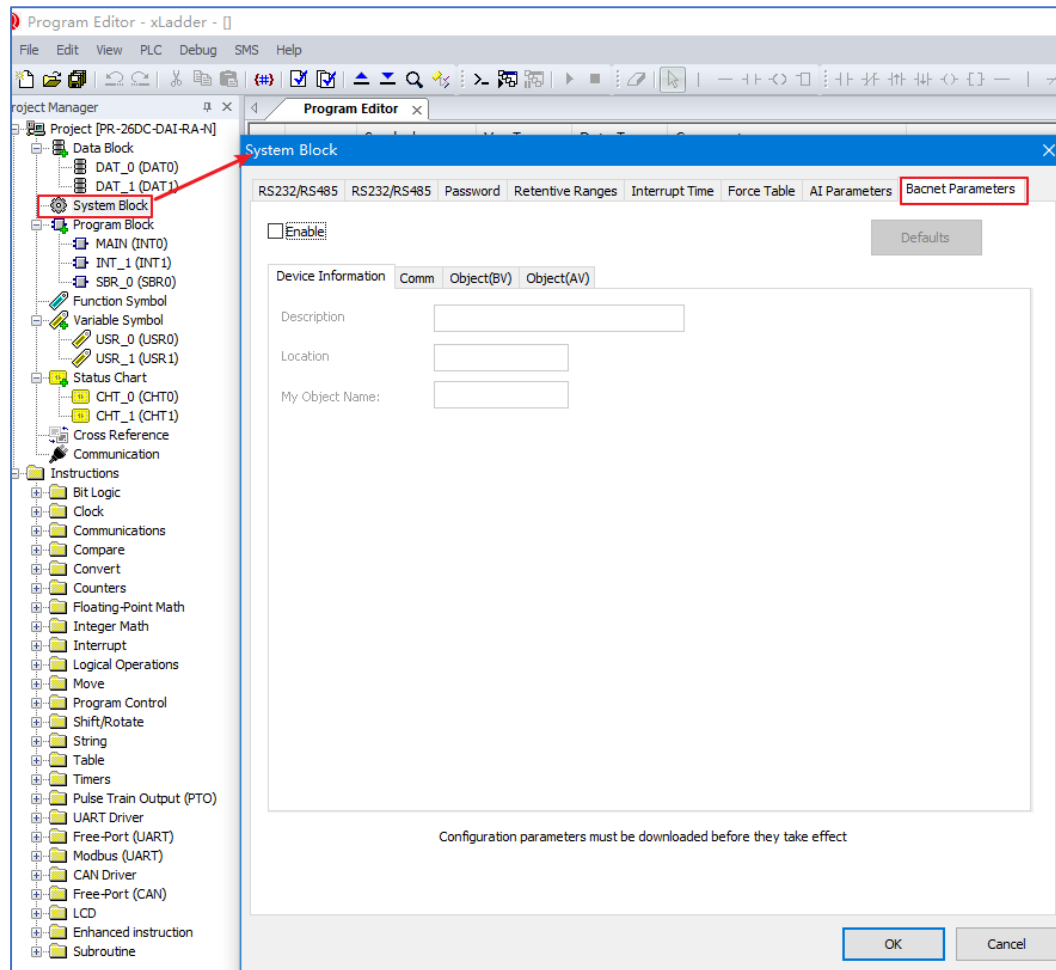
PR-26DC-DAI-RA-N supports BACnet protocol and can add 250 VB and 250 VA.

1. **Firmware version requirements, as shown below:**



- 2, **Set PLC BACnet MSTP / BACnet IP**

Open the BACnet configuration window, as shown in the figure below:



Divided into 4 pages: 'Device Information', 'Comm', 'Object(BV)' and 'Object(AV)', the following four pages are introduced respectively.

'Device Information' page

This screenshot shows a close-up of the 'Device Information' page within the System Block configuration dialog. The 'Enable' checkbox is checked. The 'Device Information' sub-tab is selected, showing three input fields: 'Description' with the text 'xLadder_bacnet_test', 'Location' with the text 'rievtech', and 'My Object Name' with the text 'RIEVTECH_PLC'.

On this page, you can fill in relevant characters in the 'Description', 'Location', 'My Object Name' directories.

'Description' is limited to 50 characters.

'Location' is limited to 12 characters.

'My Object Name' is limited to 32 characters.

'Comm' page

(1) Bacnet MSTP

Device Information		Comm	Object(BV)	Object(AV)
Protocol	Bacnet MSTP			
Time out	10	(1---30 Second)		
Device number	8	(1---4194303)		
Channel	COM2(Built-in RS485)			
BPS	9600			
Parity	None			
PLC BACNET MAC	1	(0---255)		
BACNET MAC MAX	127	(0---255)		

'Protocol'

Select BACnet protocol, there are 2 options: 'Bacnet MSTP' for RS485 communication and 'Bacnet IP' for Ethernet communication. Here select 'Bacnet MSTP'.

'Time out'

A value from 1 -- 30 (Second) can be set.

'Device number'

A value from 1 to 41943303 can be set. It has the same function as the device name and is used to identify the device in the network. Be careful not to repeat the device number.

Device Information		Comm	Object(BV)	Object(AV)
Protocol	Bacnet MSTP			
Time out	30	(1---30 Seco		
Device number	11	(1---4194303		
Channel	COM2 (Built-in RS485)			
BPS	9600			
Parity	None			
PLC BACNET MAC	1	(0---127)		
BACNET MAC MAX	127	(0---127)		

Property	Value
MacAddress	1
SNET	0
SADR	
vendor-name	BACne
max-apdu-length...	1476

'Channel'

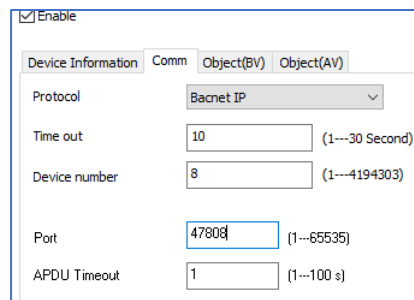
Select the RS485 channel supported by the PLC. The number of RS485 channels supported by different models is also different. The distribution of com ports on the PLC is shown in the figure below, taking PR-26DC-DAI-RT-N as an example:

It is necessary to ensure that the MAC of each device is unique, and a value from 0 to 127 can be set.

'BACNET MAC MAX'

The default value is 127, which sets the maximum mac value of BACnet devices in the network. The input range is 0 --127. Set the appropriate value according to the requirement.

(2) Bacnet IP



Enable

Device Information Comm Object(BV) Object(AV)

Protocol Bacnet IP

Time out 10 (1---30 Second)

Device number 8 (1---4194303)

Port 47808 (1---65535)

APDU Timeout 1 (1---100 s)

'Protocol'

Select BACnet protocol, there are 2 options: 'Bacnet MSTP' for RS485 communication and 'Bacnet IP' for Ethernet communication. Here select 'Bacnet IP'.

'Time out'

A value from 1 -- 30 (Second) can be set.

'Device number'

A value from 1 to 41943303 can be set. It has the same function as the device name and is used to identify the device in the network. Be careful not to repeat the device number.



Property

Device Information Comm Object(BV) Object(AV)

Protocol Bacnet IP

Time out 30 (1---30 Second)

Device number 16 (1---4194303)

Port 47808 (1---65535)

APDU Timeout 1 (1---100 s)

BACnet

- BACnet Ethernet
- BACnet IP
- BACnet MS/TP

Device:16

Property	Value
Address	192.168.0.222:47808
SNET	0
SADR	BACnet Stack at Source
max-apdu-length-...	1476

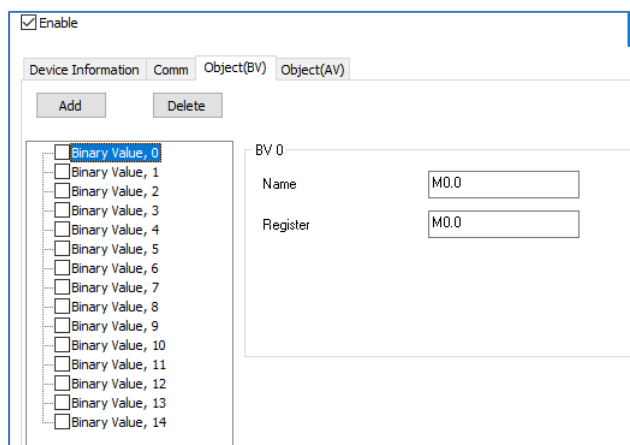
'Port'

The default is 47808.

'APDU Timeout'

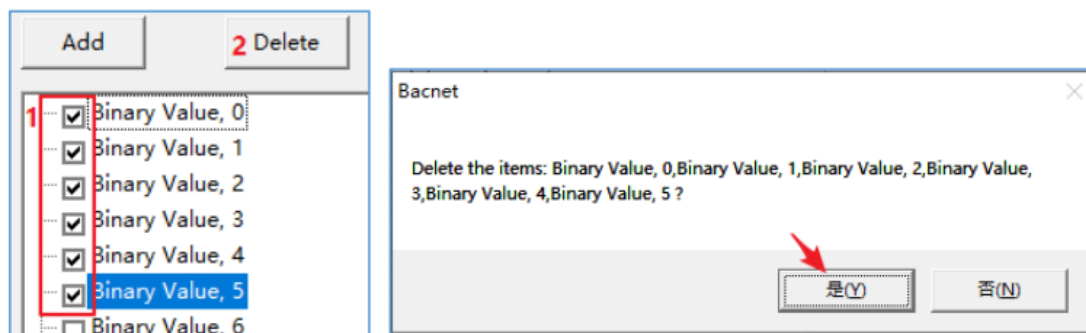
A value from 1 -- 100s can be set, and the default value is 1.

'Object(BV)' page



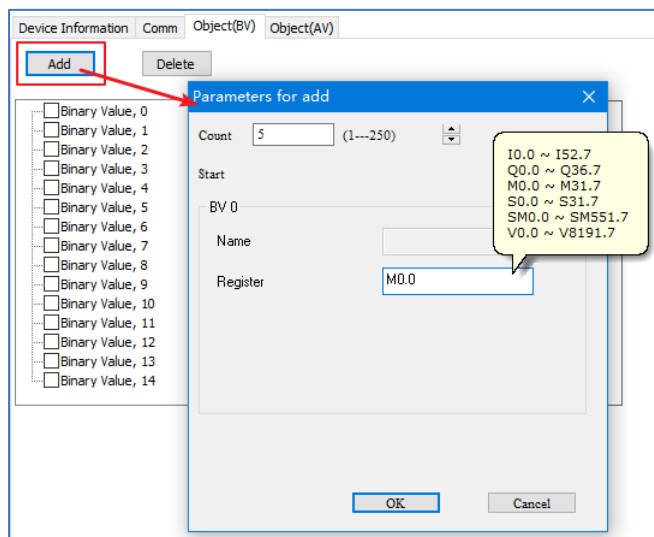
Delete BV

Check the checkbox in front of the BV that needs to be deleted (multiple selections are allowed), and then click the 'Delete' button above.



Add BV

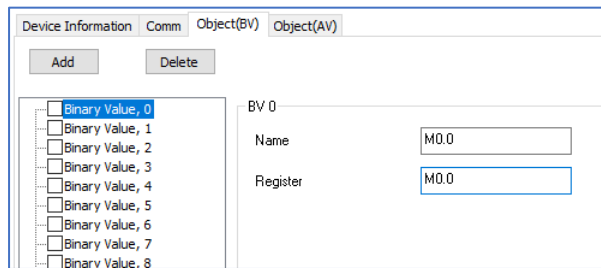
Click the 'Add' button above.



Count: Set the number of BV to add. Note that the total number of BV will not exceed 250.

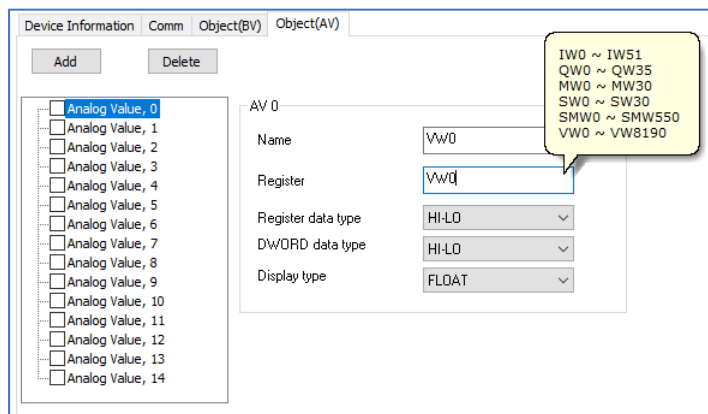
For example, if some BV already exists, even if 250 is filled in here, the number of newly added BV will not be 250, but 250 minus the existing number.

Register: You can choose I, Q, M, S, SM, V or empty. With the 'Count' above, multiple BV of the same register can be added at one time.



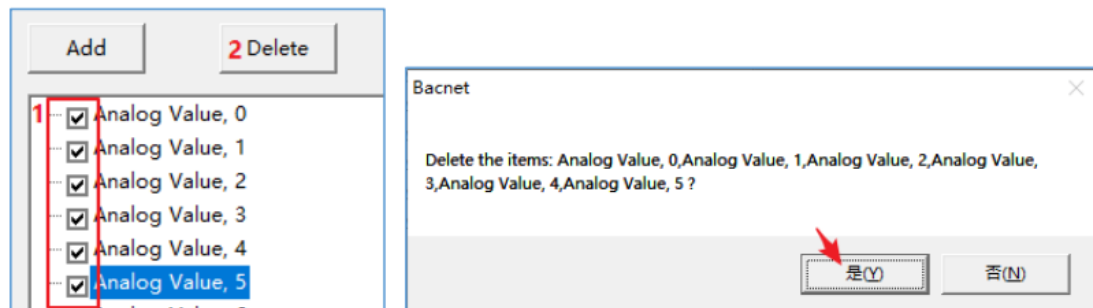
First select 'Binary Value, 0' in the list on the left, set the name of the object on the right, and assign a register to it. 'Name' only allows up to 8 commonly used characters.

‘Object(AV)’ page



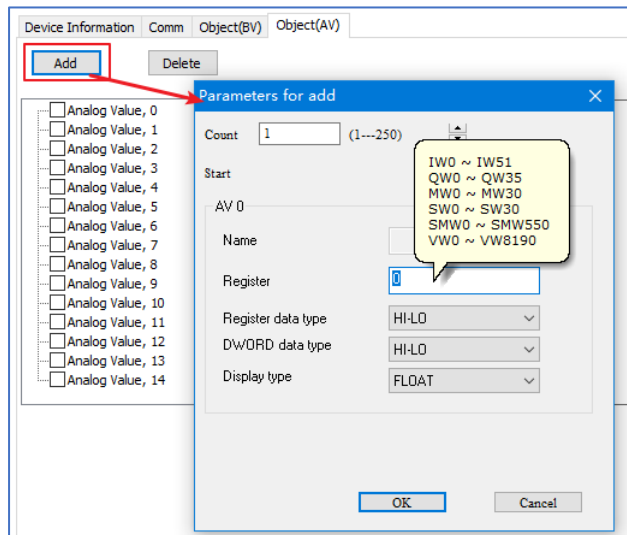
Delete AV

Check the checkbox in front of the AV that needs to be deleted (multiple selections are allowed), and then click the ‘Delete’ button above.



Add AV

Click the ‘Add’ button above.



Count: Set the number of AV to add. Note that the total number of AV will not exceed 250. For example, if some AV already exists, even if 250 is filled in here, the number of newly added AV will not be 250, but 250 minus the existing number.

Register: You can choose IW, QW, MW, SW, SMW, VW or empty. With the 'Count' above, multiple AV of the same register can be added at one time.

'Register data type'

The byte order when providing the value in register, you can choose 'HI-LO' and 'LO-HI' modes.

'DWORD data type'


The byte order of DWORD data, you can choose 'HI-LO' and 'LO-HI' modes.

'Display type'

Select the data format when displaying values, only support 'FLOAT'.

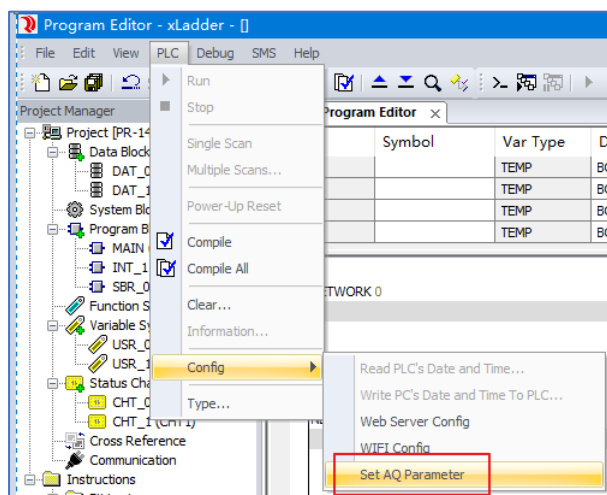
After configuring all the parameters, click the 'OK' button in the lower right corner, as shown in the figure below. Then download the BACnet settings to the PLC along with the xLadder program, and the settings will take effect after the PLC restarts.

For how to use the BACnet protocol of RIEVRECH HMI, please refer to the document on the website – 'Rievtech PLC BACnet MSTP BACnet IP parameter configuration method and usage examples-V2.pdf', download address: <https://www.rievtech.com/download.html>

 **V1.3.1.1**

2024-01-16

Added 'Set AQ Parameter' menu.



V1.3.1.0

2023-09-14

1. Support C language subroutine.

Supports standard C language and its library functions (need to add header files).

(1) Supported models and firmware versions

Model list:

- ✓ PR-12AC-R-N
- ✓ PR-12DC-DA-R-N
- ✓ PR-18AC-R-N
- ✓ PR-18DC-DAI-R-N
- ✓ PR-18DC-DAI-TN-N
- ✓ PR-26AC-R-N
- ✓ PR-26DC-DAI-RA-N
- ✓ PR-26DC-DAI-RT-WIFI
- ✓ PR-26DC-DAI-RT-N
- ✓ PR-23DC-PTDAI-RT-N

Firmware version requirements:

The firmware version of the above models needs to be greater than or equal to **V2.07**.

(2) Instructions for use

a) **Special function description**

PLC variable reading function

Function	Description
GetU8(R, O)	Get 8-bit unsigned data
GetU16(R, O)	Get 16-bit unsigned data
GetU32(R, O)	Get 32-bit unsigned data
GetS8(R, O)	Get 8-bit signed data
GetS16(R, O)	Get 16-bit signed data

GetS32(R, O)	Get 32-bit signed data
GetF32(R, O)	Get 32-bit floating point number
GetT(R, O, B)	Get 1 digit data

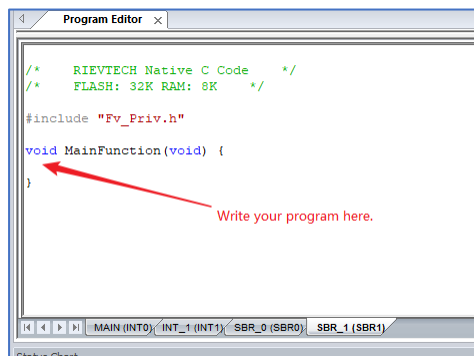
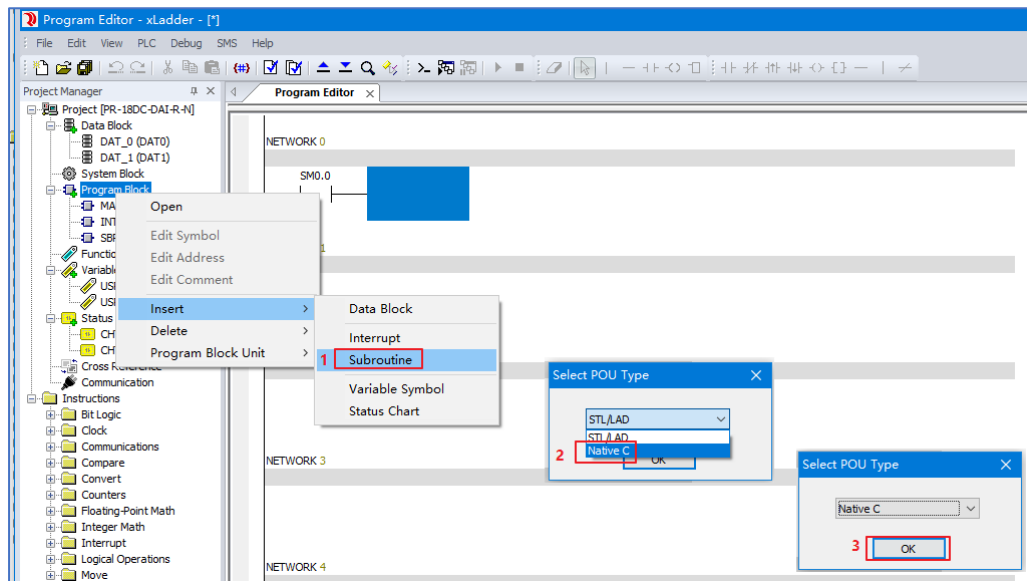
PLC variable writing function

Function	Description
SetU8(R, O, V)	Write 8-bit unsigned data
SetU16(R, O, V)	Write 16-bit unsigned data
SetU32(R, O, V)	Write 32-bit unsigned data
SetS8(R, O, V)	Write 8-bit signed data
SetS16(R, O, V)	Write 16-bit signed data
SetS32(R, O, V)	Write 32-bit signed data
SetF32(R, O, V)	Write 32-bit floating point number
SetT(R, O, B, V)	Write 1 digit data

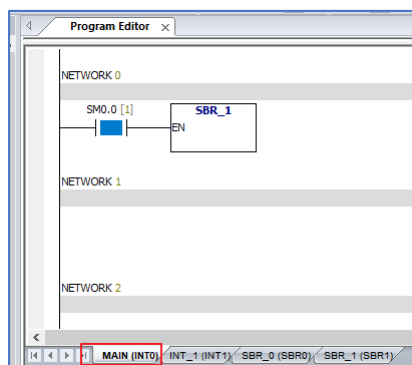
Function parameter description:

- R: PLC variable area, support I、Q、M、S、SM、V、T、C、HC、AI、AQ、L、AC。
- O: Offset of PLC variable, unit: byte.
- B: Bit offset of PLC variable.
- V: The value of the PLC variable.

b)Example description



Such as the following sample program:
Compile and download to PLC.



```

Program Editor x

/* RIEVTECH Native C Code */
/* FLASH: 32K RAM: 8K */

#include "Fv_Priv.h"

void MainFunction(void) {
    int a = GetU16(V,0);
    a += 20;
    SetU16(V,10,a);
}

```

MAIN (INT0) INT_1 (INT1) SBR_0 (SBR0) **SBR_1 (SBR1)**

MAIN (INT0) INT_1 (INT1) SBR_0 (SBR0) **SBR_1**

Status Chart

Address	Data Type	Value	For
VW0	INT	11	
VW10	INT	31	

C language subroutines do not support offline simulation yet.

V1.3

2023-09-14

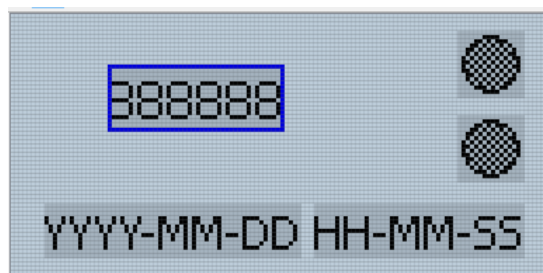
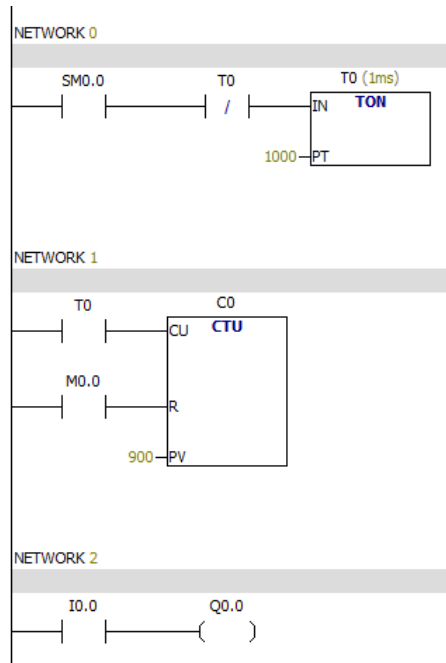
1. Fixed some bugs in offline simulation.

2023-08-30

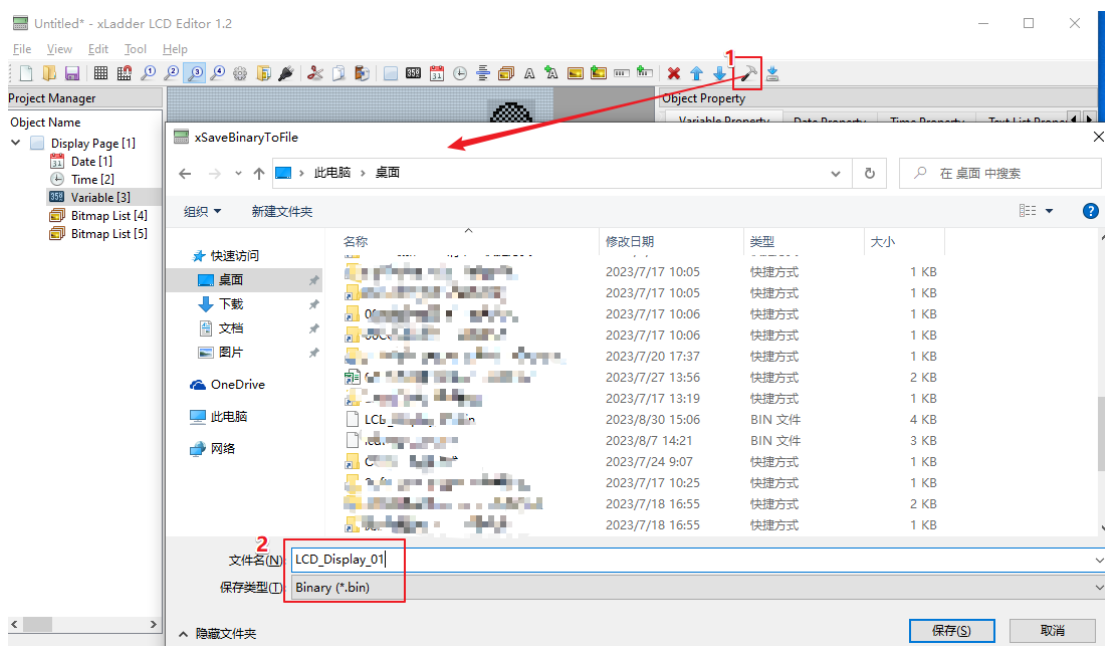
- 1, Modified the offline simulation of xLadder software. For detailed usage, please refer to the following content:

- (1) Create xLadder and HmiEditor programs.

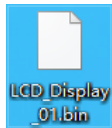




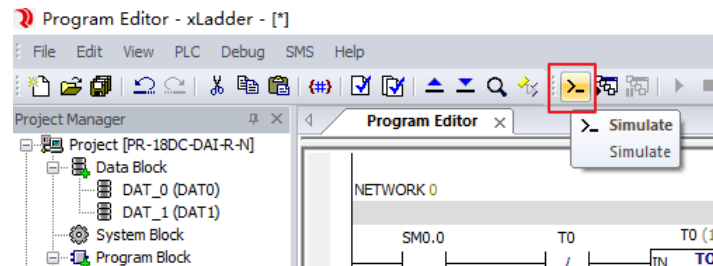
(2) Generate a bin file on the HmiEditor software.



A bin file will be generated under the selected path, as shown in the figure below:

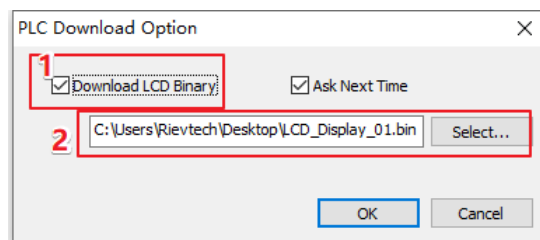


(3) Perform simulation operations on xLadder software.



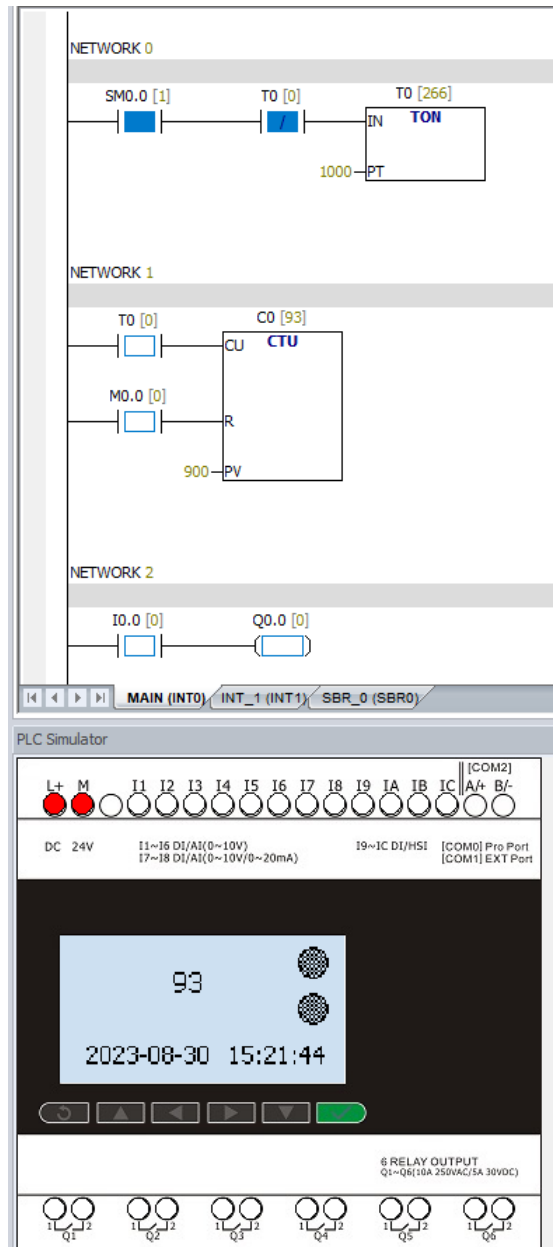
Click the 'Simulate' button in the toolbar to pop up the following dialog box, check 'Download LCD Binary', and then select the HmiEditor software to generate the bin file.

In addition, it should be noted that this step is also performed when downloading the xladder program to the PLC. The bin file of the LCD panel can be downloaded to the PLC together. When 'Download LCD Binary' is not checked, the bin file of the LCD panel will not be downloaded.

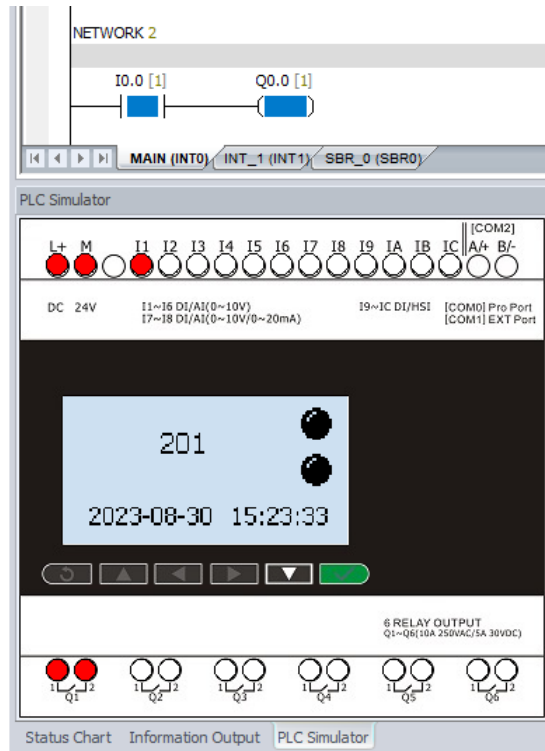


Then click the 'OK' button in the picture above.

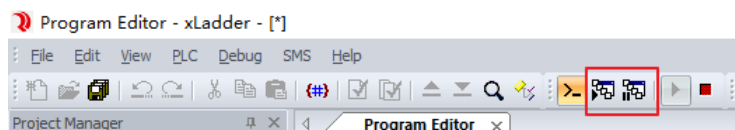
(4) The xLadder software enters the simulation state, as shown below:



You can click on I1 on the picture, I0.0 in the program will change to '1', and Q0.0 will also change to '1', as shown below:



(5) The two tool buttons in the figure below can pause the simulation and continue the simulation. Click the 'Simulate' button in the toolbar again to exit the simulation.



2, Fix the problem of program crash caused by communication timeout

3, Before monitoring, the program in the software will be compared with the program in the PLC. When the upper and lower programs are inconsistent, xLadder will give a warning.

4, If there is enough space when downloading the program, xLadder can download symbols and comment information, and the symbol comment information includes:

- Block names and comments of all program blocks, data blocks, symbol tables.
- Symbols and comments for temporary variables of program blocks.
- Comments for all rungs in the ladder diagram, comments for instructions.
- Symbols and comments for all variables in the symbol table.
- Comments for all entries in the data block.

Symbols and annotations can be restored after upload.

If there is insufficient space when downloading the program, the symbol comment information will be discarded automatically.