# Rievtech PLC BACnet IP parameter configuration method and usage examples

NOTE:

(1)Ethernet PLC with firmware version number >=V1.57 supports BACnet.
(2) Only xLogic with version number >=V3.4.3.7 supports BACnet.

## 1. Set PLC BACnet IP

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

General Comment Page Layout Parameter Hardware the data entered here is transmitted with the program to the device Program name: Program password: Old password: New password: New password: Repeat new password: Protection with write Disable read program Disable read program Caution: Upon such option is selected then program upload would be permanently prohibited Phonebook Index CPU/External AID Voltage V AIF Voltage V AIE Voltage V AIG Voltage V AI sample Count 34 V Period 300 * ms	the data entered here is transmitted with the program to the device         Program name:         Program password         Old password:         New password:         New password:         Protection with write         Disable read program         Caution: Upon such option is selected, then program upload would be permanently prohibited         Phonebook Index         VIndex in Block         AI Type for PR Series         CPU       AIE         Voltage       AIG         Voltage       AIG	fo	
Program name: Program password Old password: New password: Repeat new password: Protection with write Disable read program Disable read program Caution: Upon such option is selected, then program upload would be permanently prohibited Phonebook Index Phonebook Index Phonebook Index CPU/External AID Voltage V AIF Voltage V AI sample Count 34 Veriod 300 ms	Program name:       Parameter password         Old password:       Old password:         New password:       Old password:         Protection with write       Repeat new password:         Disable read program       Caution: Upon such option is selected, then program upload would be permanently prohibited         Phonebook Index       Image: The selected of	General   Comment   Page Layout   Par	ameter Hardware
Program password       Parameter password         Old password:       Old password:         New password:       Repeat new password:         Protection with write       Repeat new password:         Disable read program       Caution: Upon such option is selected, then program upload would be permanently prohibited         Disable read program       Phonebook Index         Phonebook Index       Index in Block         AI Type for PR Series       CPU/External         CPU/External       AID         Voltage       AIG         Voltage       AIG         Voltage       AIG         Voltage       AIS	Program password         Old password:         New password:         New password:         Protection with write         Disable read program         Disable read program         Caution: Upon such option is selected, then program upload would be permanently prohibited         Phonebook Index         CPU         AIT Type for PR Series         CPU         CPU         AIE         Voltage         AIS sample         Count 34         CPU         Image:         Image:         Count 34	the data entered here is transmi	itted with the program to the device
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Repeat new password:       Repeat new password:         Protection with write       Repeat new password:         Disable read program       Caution: Upon such option is selected, then program upload would be permanently prohibited         Phonebook Index       Index in Block         AI Type for PR Series       CPU/External         CPU       AID         Voltage       AIF         Voltage       AIF         AI sample       Count 34         Veried       300	Repeat new password:       Repeat new password:         Protection with write       Repeat new password:         Disable read program       Caution: Upon such option is selected, then program upload would be permently prohibited         Phonebook Index       Index in Block         AI Type for PR Series       CPU         CPU       AID         Voltage       AIG         CPU       AIE         Voltage       AIG         Voltage       AIG         Voltage       AIG         CPU       COUL         AIE       Voltage         Image:       Image:         Count       GHE CPU (FR-260C-DAI-KI-KI) can not support	Old password:	Old password:
Protection with write      Disable read program     Caution: Upon such option is     selected, then program upload would     be permanently prohibited      Phonebook Index     Index in Block      AI Type for PR Series     CFU/External     AID     Voltage      AIF     Voltage     AIF     Voltage     AIF     Voltage     AI     AI Type for PR Series     CFU/External     AID     Voltage     AIF     Voltage     AIF     Voltage     AIF     Voltage     AI     AI     Voltage     AI     AI     Voltage     AIF     Voltage     AI     Senple     Count 34     Period     300     Senple     Count	Protection with write  Disable read program  Disable read program  Caution: Upon such option is selected, then program upload would be permanently prohibited  Phonebook Index  Findex in Block  AI Type for PR Series  CFU/External  AID Voltage V AIF Voltage V  AIE Voltage AIG Voltage V  AI sample  Count 34  Period 300  BACRET  [The CFV [FE-26BC-DAI-KI-KI] can not support]	New password:	New password:
Disable read program  Disable read program  Disable read program  Caution: Upon such option is selected, then program upload would be permanently prohibited  Phonebook Index  Phonebook Index  Iv Index in Block  AI Type for PR Series  CFU/External  AID Voltage  AIF Voltage  AIF Voltage  AIF Voltage  AI Semple  Count 34  Period 300  ms	Disable read program  Disable read program  Disable read program  Caution: Upon such option is selected, then program upload would be permanently prohibited  Phonebook Index  Findex in Block  AI Type for PR Series  CPU/External  ATD Voltage AIF Voltage  AIF Voltage  AIF Voltage  AI  ATE Voltage  AI  ATE Count 34  Period 300  AI  BACKET  (Phonebook-DAI-KT-KT-KT) can not support	Repeat new password:	Repeat new password:
Caution: Upon such option is selected, then program upload would be permanently prohibited Phonebook Index V Index in Block AI Type for PR Series CPU/External AID Voltage V AIF Voltage V AIF V V V V V V V V V V V V V	Caution: Upon such option is selected, then program upload would be permanently prohibited Phonebook Index VIndex in Block AI Type for PR Series CPU/External AID Voltage V AIF Voltage V AIE Voltage AIG Voltage V AI sample Count 34 V Period 300 ms	Protection with write	
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Disable read program       selected, then program upload would be permanently prohibited         Phonebook Index       Index in Block         AI Type for PR Series       Index in Block         CPU/External       AID         Voltage       AIF         Voltage       AIG	□ Disable read program       selected, then program upload would be permanently prohibited         □ Phonebook Index       □         □ Index in Block       □         AI Type for PR Series       □         CPU/External       AID         Voltage       ▲ AIF         Voltage       ▲ AIG         Voltage       ▲ AIG         Voltage       ▲ AIG         Voltage       ▲ AIG         CPU       ▼         AIE       Voltage         ✓       AIE         Voltage       ▲ AIG         Voltage       ▲ AIG         Count       34         ✓       Period         (The CPU (FR-26DE-DAI-KT-KT) can not support	Disable read program	Caution: Moon such option is
AI Type for PR Series CPU/External AID Voltage V AIF Voltage V CPU V AIF Voltage V AIF Voltage V AIG Voltage V AI sample Count 34 V Period 300 1 ms	AI Type for PR Series CPU/External AID Voltage V AIF Voltage V CPU V AIE Voltage AIG Voltage V AI sample Count 34 V Period 300 ms	🗍 Disable read program	selected, then program upload would
AI Type for PR Series CPU/External AID Voltage V AIF Voltage V CPU V AIF Voltage V AIF Voltage V AIG Voltage V AI sample Count 34 V Period 300 1 ms	AI Type for PR Series CPU/External AID Voltage V AIF Voltage V CPU V AIE Voltage AIG Voltage V AI sample Count 34 V Period 300 ms		
AI Type for PR Series CPU/External AID Voltage V AIF Voltage V AIE Voltage V AIG Voltage V AI sample Count 34 V Period 300 1 ms	AI Type for PR Series CPU/External AID Voltage V AIF Voltage V CPU V AIE Voltage AIG Voltage V AI sample Count 34 V Period 300 ms BACNET [The CPU [PR-26DC-DAI-KI-K] can not support		Phonebook Index
CFU/External AID Voltage V AIF Voltage V CFU V AIE Voltage V AIG Voltage V AI sample Count 34 V Period 300 ms	CPU/External ATD Voltage AIF Voltage CPU ATE Voltage AIG Voltage AI sample Count 34 Period 300 ms BACKET (The CPU (PE-26DC-DAI-KT-H) can not support		🔽 Index in Block
AID Voltage AIF Voltage CPV V AIE Voltage V AIG Voltage V AI sample Count 34 V Period 300 ms	ALD FORTER ALF Voltage	AI Type for PR Series	
AI sample Count 34 V Period 300 ms	AI sample Count 34 Period 300 ms BACKET [The CPU [FE-26DC-DAI-KT-N] can not support	CPU/External AID	Voltage Voltage V
Count 34 • Period 300 • ms	Count 34  Period 300 ms BACNET The CFU [FR-26DC-DAI-KT-N] can not support	CPU 🗾 AIE	Voltage 💌 AIG Voltage 💌
	-BACNET	AI sample	
	-BACNET [The CPV [PR-26DC-DAI-RT-N] can not support	Count 34 - Peri	od 300 ms
	The CPU [PR-26DC-DAI-RT-N] can not support	,	·
The CPU [PR-26DC-DAI-RT-N] can not support		The CPU []	PR-26DC-DAI-RT-N] can not support
Loniig BACNET!		Contig BACNET!	

Select the check box, the 'Config' button becomes available, then click this button, the configuration window pops up, as shown in the figure below. Divided into 3 pages: 'Comm', 'Object(BV)' and 'Object(AV)', the following three pages are introduced respectively.

Property	X	
Comm Object(BV) Object	ject(AV)	
Protocol	Bacnet MSTP	
Time out	30 (130 Second)	
Device number	1 (14194303)	
Channel	COM2(Built-in RS485)	
BPS	9600 💌	
Parity	None	
PLC BACNET MAC	1 (0127)	
BACNET MAC MAX	127 (0127)	
	OK Cancel Apply	

## 'Comm' page

Comm Object(BV) Object(AV)				
Protocol	Bacnet IP	<b>•</b>		
Time out	30	(130 Second)		
Device number	2	(14194303)		
Port	47808	(165535)		
APDV Timeout	1	(1100 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, and its uniqueness needs to be guaranteed.

## 'Port'

The default is 47808.

## 'APDU Timeout'

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

'Object(BV)' page

Comm Object(BV) Object(AV)		
Binary Value, O	DV 0	
Binary Value, 1 Binary Value, 2	Name	cpu-inO1
-Binary Value, 3	Register	I <b>v</b> I001
- Binary Value, 4 Binary Value, 5	negrater	
- Binary Value, 6 Binary Value, 7		
-Binary Value, 8		
Binary Value, 9 Binary Value, 10		
Binary Value, 11 Binary Value, 12		
Binary Value, 13		
Binary Value, 14 Binary Value, 15		

16 digital objects can be set on this page, and an I, Q or F register can be assigned to each object. Registers of type 'I' can only be read, not written. Registers of type 'Q' and 'F' support read/write. But in the program in the PLC, the input pins of their blocks need to be suspended, so that the write operation can be successful.

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

Comm Object(BV) Object(AV)		
Comm Object (BV) Object (AV) Analog Value, 0 	AV O Name Register Register data type DWORD data type Display type	Cpu-AI01 AI V AI001 HI-LO V FLOAT V
Analog Value, 14		

Similarly, 16 analog objects can be set on this page, and an AI, AQ, AF or VW register can be assigned to each object. The 'AI' register can only read values, but cannot write values. AQ, AF and VW support read/write, and only when the input pins of these register blocks are floating, the write value operation can be successful.

The operation steps are the same as the BV page.

#### '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 xLogic program, and the settings will take effect after the PLC restarts.

Property			<b>x</b>
Comm Object(BV) Object(AV) Analog Value, 0 Analog Value, 1 Analog Value, 2 Analog Value, 3 Analog Value, 3 Analog Value, 5 Analog Value, 6 Analog Value, 6 Analog Value, 8 Analog Value, 9 Analog Value, 10 Analog Value, 11 Analog Value, 11 Analog Value, 13 Analog Value, 13 Analog Value, 14 Analog Value, 15	AV 0 Name Register Register data type DWORD data type Display type	CpurAl01 AI V Al001 HI-LO V FLOAT V	
		OK Cancel	Apply

## 2. BACnetScan software reads and writes PLC registers

After completing the above PLC parameter settings, open the BACnetScan software (only for demonstration, you can use other software with the same function), as shown in the figure below:

💑 BACnetScan - 无标题 <u>File E</u> dit <u>V</u> iew <u>T</u> ools <u>H</u> elp	100		
\delta M 🖆 🗡 X			
日朝 BACnet BACnet Ethernet 是 BACnet IP	Property	Value	
< III	•		
Date Time	Event		

Select 'BACnet IP', right-click, pop-up right-click menu, select 'BACnet IP Setting'.

BACnet Ethernet	
BACne Search Device	
BACnet IP Settin	ng

BACnet IP Configuration
IP Adapter: 192.168.0.61 (Realtek PCIe GbE Family Controller)
From: 1 To: 255 Response Timeout: 10000 ms
Communication Parameters Port: 47808 APDU Timeout: 1000 ms BBMD Register Foreign Device:
OK Cancel

Select the physical network card of the PC, and keep the default value of 47808 for 'Port'. After setting, click the 'OK' button below.

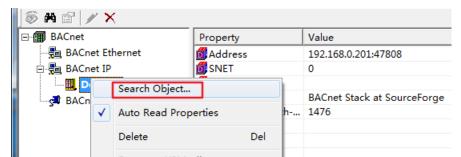
Then select the 'Search Device...' option in the right-click menu, as shown in the figure below.



At this time, some prompts will be displayed in the prompt bar, and all found devices will be listed under the 'BACnet IP' option, as shown in the figure below, and the message bar will prompt 'BACnet IP'Device: 2'is found'. The IP of the PLC is 192.168 .0.201.

BACnet		Property Value	
	Ethernet	Address 192.168.0.201:47808	
🖃 🗓 BACnet	IP	SNET 0	
Devi	ce:2	<b>1</b> SADR	
BACnet		vendor-name     BACnet Stack at Source	Forge
34 57167161		🗊 max-apdu-length 1476	
۹ []	11		
	II Time	Event	
< Date € 2022-11-28		Event Searching BACnet IP devices	
Date 2022-11-28	Time		
Date 2022-11-28 2022-11-28	Time 15:25:36	Searching BACnet IP devices	
Date	Time 15:25:36 15:25:36	Searching BACnet IP devices IP_WhoIs	

Select 'Device: 2', right-click, pop up the right-click menu, and select the 'Search Object' option.



BACnetScan will list all the searched Objects under the Device: 2 option, as shown in the figure below:

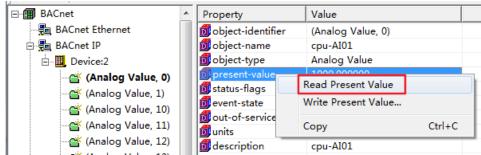
🖻 覺 BACnet IP	
🖻 🛄 Device:2	
💣 (Analog Value, 0)	
👾 📸 (Analog Value, 1)	
📸 (Analog Value, 10)	
📸 (Analog Value, 11)	
📸 (Analog Value, 12)	
📸 (Analog Value, 13)	
- 📸 (Analog Value, 14)	
(Analog Value, 15)	
(Analog Value, 2)	
📸 (Analog Value, 3)	
📸 (Analog Value, 4)	
📸 (Analog Value, 5)	Ξ
📸 (Analog Value, 6)	
- 🕍 (Analog Value, 7)	
- 🕍 (Analog Value, 8)	
📸 (Analog Value, 9)	
- 📸 (Binary Value, 0)	
📸 (Binary Value, 1)	
🛛 📸 (Binary Value, 10)	
- 📸 (Binary Value, 11)	
👾 📸 (Binary Value, 12)	
🖙 📸 (Binary Value, 13)	
👾 🎬 (Binary Value, 14)	
👾 📸 (Binary Value, 15)	
🖙 📸 (Binary Value, 2)	
🖙 📸 (Binary Value, 3)	
🖙 📸 (Binary Value, 4)	1
🖙 📸 (Binary Value, 5)	
- 📸 (Binary Value, 6)	
- 📸 (Binary Value, 7)	
(Rinany Value 8)	-

All 16 Binary Values and 16 Analog Values of the PLC will be listed, even if they are not used.

Both the name and value of 'Analog Value, 0' can be found in the property bar on the right, as shown in the figure below.

⊡ 📾 BACnet		Duamanta	Value
BACHEL	_	Property	value
- 🖶 BACnet Ethernet		👩 object-identifier	(Analog Value, 0)
🖻 📲 BACnet IP		👩 object-name	cpu-AI01
🖃 🛄 Device:2		D object-type	Analog Value
(Analog Value, 0)		present-value	1000.000000
(Analog Value, 1)		🔟 status-flags	{false,false,false,true}
(Analog Value, 10)		event-state	normal
(Analog Value, 10)		Dout-of-service	1
		Dunits	no-units
(Analog Value, 12)		description	cpu-AI01
🛛 💕 (Analog Value, 13)			

Select the 'present-value' attribute, right-click, and select the 'Read Present Value' option in the right-click menu to update the current value of PLC Al01.



Select the 'Write Present Value' option in the right-click menu to write the value of PLC AF1 as shown in the figure below:

🔺 (Analog Value, 14)	*	Property		Value		
📸 (Analog Value, 15)		👩 object-identifier		(Analog Value, 2)		
📲 (Analog Value, 2)		👩 object-name		cpu-AF1		
📸 (Analog Value, 3)		👩 object-	type	Analog V	alue	
💣 (Analog Value, 4)		D presen		101.0000	າດ	
		D st	Read Presen	t Value		
	_		Write Preser	nt Value		
- 📸 (Analog Value, 7)			Сору		Ctrl+C	
- 📸 (Analog Value, 8)		descrip	otion	cpu-AF1		
🎬 (Analog Value, 9)						

Enter a new value in the 'Value' of the pop-up window, and then click the 'Set' button to write the new value into AF1.

Set
Release
Cancel

Write operations have priorities 1-16, with the minimum priority being 16. After the writing is successful, the value of 'present-value' will change to a new value, and the information column will prompt 'Succeed to write 'present-value' property'.

⑧ 两 😭 🗡	×			
	nalog Value, 14)	*	Property	Value
	nalog Value, 15)		👩 object-identifier	(Analog Value, 2)
- 💣 (/	Analog Value, 2)		🔟 object-name	cpu-AF1
	nalog Value, 3)		🔟 object-type	Analog Value
	nalog Value, 4)	=	👩 present-value	200.000000
	nalog Value, 5)		👩 status-flags	{false,false,false,false}
	nalog Value, 6)		🗾 event-state	normal
	nalog Value, 7)		🗾 out-of-service	0
_	· · ·		🗾 units	no-units
_	nalog Value, 8)		👩 description	cpu-AF1
- · · · · ·	nalog Value, 9)	-		
Date	Time	Eve	nt	
1 2022-11-26	13:54:27	Suc	ceed to read 'present	-value' property
0 2022-11-26	13:54:28	Suc	ceed to write 'present	-value' property
0 2022-11-26	13:54:28	Suc	ceed to read 'present	-value' property

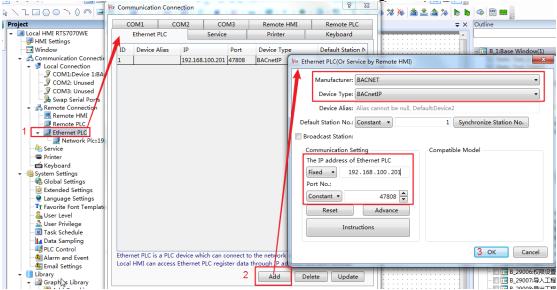
## 3. HMI communicates with PLC through BACnet IP protocol

#### (1) Add BACnet IP device

HMI and PLC are in a local area network, for example, the IP address of PLC is 192.168.0.201, and the IP address of HMI is 192.168.0.200.

Connect the	FLink: Not Use 🔹			
Description		Ethernet Setting -		
HMI Series :	V3	Auto IP Addre	ss (DHCP)	Static IP Address
Size:	7	IP Address:	192.168.0.200	SRW10010~13
Resolution:	1024 X 600	Subnet Mask:	255.255.255.0	SRW10014~17
Color:	24BIT Color	Gateway:	192.168.0.1	SRW10018~21
Touch Type:	Resistive Touch Panel	DNS1:	0.0.0.0	SRW10022~25
Key:	0	DNS2:	0.0.0.0	SRW10026~29
Ethernet: Yes				t IP address assigning method
Main USB:	1	(Auto-allocate or	static)	
SD/TF Card:	None			
COM1 :	RS232\RS485-2\RS485-4	Use FTP Proto	col	
COM2 :	RS485-2			
	RS232	Rotation Display		
COM3 :		No rotation		Preview
COM3 : COM4 :	None		ckWise	
	None	Rotate 90° Clo		-
COM4 :		Rotate 90° Clo Rotate 90° Con	unter ClockWise	Δ
COM4 : CAN :	None	0	unter ClockWise	A
COM4 : CAN : Expansion Port:	None	Rotate 90° Con	unter ClockWise	A

Add BACnet IP device on Rievtech Studio, as shown in the figure below.



Double-click the 'Ethernet PLC' option, and click the 'Add' button in the pop-up window. In the new window, select 'BACNET' for 'Manufacturer' and 'BACnetIP' for 'Device Type'. Fill in the IP address of the PLC, and keep the value of Port as default. Click the OK button.

## (2) Add BACnetIP 'Device Tag Library'

Double click on 'Device Tag Library'

Rs Device Tag Library		x
Serial Ports		
Add Equipment Delete	Sa	ve

In the pop-up window, select 'Ethernet Port', 'Manufacturer' select 'BACNET', 'Device Type' select 'BACnetIP', as shown below:

E	Add Equipment	:	×.
	Serial Port Type:	Serial Po	rt <mark>:                                     </mark>
	Manufacturer:	BACNET	•
	Device Type:	BACnetIP	
			OK Cancel

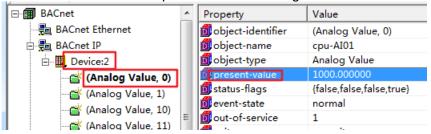
A new 'BACnetIP' will be created under the 'Ethernet Port' option, as shown in the figure below.

1	Bevice Tag Library
	Serial Ports

Double-click 'BACnetIP', as shown below.

Re Device Tag Library			×
Serial Ports	Name Data Type		Station Del
Add Equipment Delete	Delete All	Add Import Export	Data Type Save
Click the 'Add' button.			
Rs Device Tag Library			
Serial Ports	Name	Data Type <b>REAL</b>	Station Del

'Name': Enter "Device-2 AnalogValue-0 present\_value". It should be noted that this name is composed of 3 parts in the figure below, and a space is added between each content. Also there is no space between 'AnalogValue'.



**'Data Type'**: Select 'REAL' for AV type data, and 'BOOL' for BV type data. **'Station'**: If there is a priority option, fill in 16 here.

After adding, as shown below:

😰 Device Tag Library		-		x
Serial Ports	Name	Data Type	Station	Del
✓ · ↓ Ethernet Port BACnetIP	Device-2 AnalogValue-0 present_	REAL	16	Î
	Device-2 AnalogValue-2 present_	REAL	16	Î
	Device-2 AnalogValue-3 present_	REAL	16	Î
	Device-2 BinaryValue-0 present_v	BOOL	16	Î
	Device-2 BinaryValue-2 present_v	BOOL	16	Î
Add Equipment Delete	Delete All Add	Import Export	Data Ty	

Click the 'Save' button to save the settings.

In addition, the configuration can be exported to a file in CSV format, and a file in CSV format can also be imported.

## (3) Add components

## Bit element

Standard Bit Address Input           Device:         Device2:[Ethernet PLC:BACnetIP]	naryValue-0 present_value naryValue-2 present_value	Data Type BOOL BOOL	Station N 16 16
Standard Bit Address Input           Device:         Device2:[Ethernet PLC:BACnetIP]			
Standard Bit Address Input	naryValue-2 present_value	BOOL	16
Deivce: Device2:[Ethernet PLC:BACnetIP]			
Tag Name: Device-2 BinaryValue-0			
		6	
		145	
	Onen	Device Tag Lib. OK	Cance

Select a tag and click the 'OK' button.

## Word element

			😰 Device Tag Item		×
Rs Numeric Input		/	Name	Data Type	Station N
General Number Format Keyboard Setting	Font Graphics Dynamic Graphics Co	nt of Setting	Device-2 AnalogValue-0 present_value	REAL	16
		-	Device-2 AnalogValue-2 present_value	REAL	16
Operation Attribute: Numeric Display 🔍 N	lumeric Input 🔘 Characters Display 🔨 Cha	racters Inpu	Device-2 AnalogValue-3 present_value	REAL	16
Display Mode: 🔲 Password					
Reading And Writing Address Is Different					
Read Address:					
Deivce: Device2:[Ethernet PLC:BACnetIP]					
Tag Name: Device-2 AnalogValue-2					
Data Type:Single-precision Floating-point Nu	mber				
Register Length: 2	Occupied Words: 2				
			Op	en Device Tag Lib.	Cancel

Select a tag and click the 'OK' button.

In addition, it should be noted that the values are all in 'float' format, so the display format of the character components is as follows:

General Number Fo	ormat Keyboard Setting	Font Graphics	Dynamic Graphics	Control Settings	Commu	
Data Type: Single precison I ▼						
Integer digits	4 🗘 Decimal P	Point:	4 🗘 🔲 Display	Positive Sign 📃 Ze	ro Paddir	
Input Lower Limit:	-10000.0000 Lower Limit	t: Constant 🔻	-10000.0000 🗘	Below Lower	r:	
Input Upper Limit:	10000.0000 Upper Limi	t: Constant 🔻	10000.0000 🗘	Over Upper:		

After adding the components, download the program to the HMI, and observe whether there are communication timeouts, communication errors and other prompts.