WE!NTEK

BACnet MS/TP Connection Manual

Applicable for EasyBuilder Pro V6.05.01 or later versions

WE!NTEK

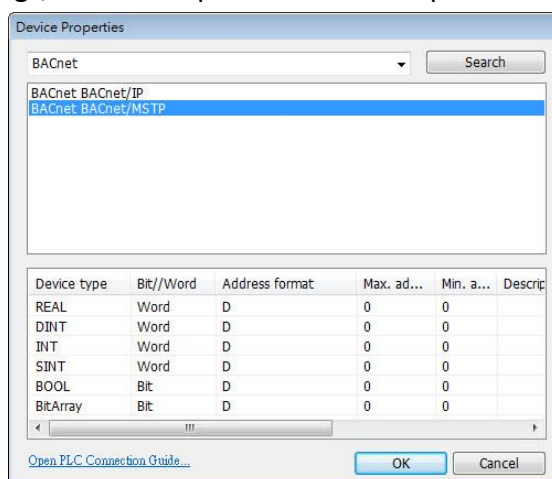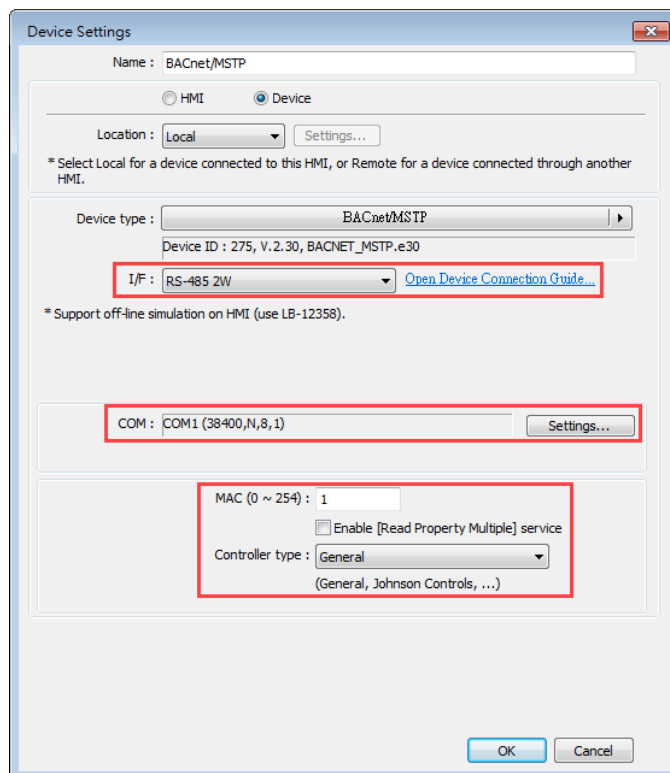## Table of Contents

1. Software Settings

This manual explains how to set up the parameters for the communication between HMI and BACnet MS/TP PLC in EasyBuilder Pro.
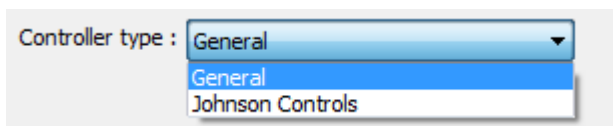
Settings in EasyBuilder Pro

1. Launch EasyBuilder Pro, add BACnet » BACnet/MSTP PLC type in System Parameter Settings, and then open its Device Properties window.
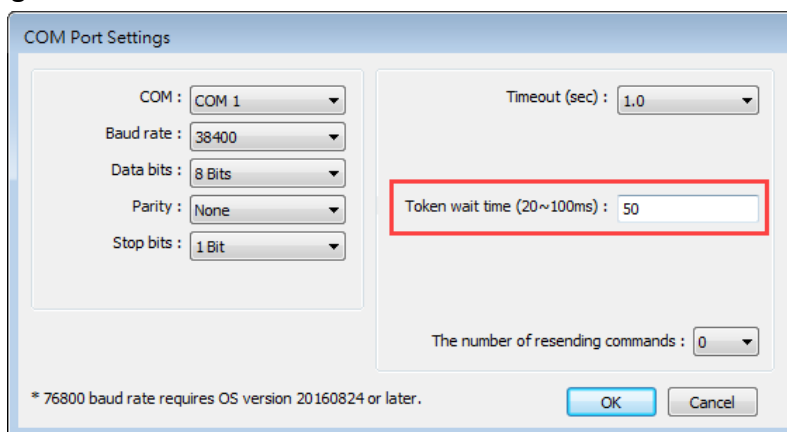

2. In System Parameter Settings » Device tab, select BACnet MSTP PLC, click [Settings], and then set up the PLC as shown in the following figure.

- MAC: The MAC has a similar function as PLC station number, where each number stands for a node on the network. When setting the MAC of each BACnet MS/TP unit, please minimize the interval between MACs if possible, to avoid a long polling time at initialization step, which can cause PLC No Response message to pop up.
- Enable [Read Property Multiple] service: Selecting this option can increase reading speed. Certain devices may not support this function.
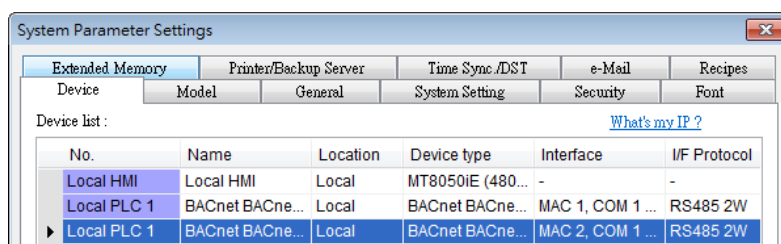- Controller type: Available options include [General] and [Johnson Controls].

- Supported COM port settings:
  - COM: RS-485 2W
  - Supported baud rates: 9600, 19200, 38400
  - Data bits: 8 Bits
  - Parity: None
  - Stop bits: 1 Bit
- Token wait time (20~100ms): The default wait time is 50 ms. PLCs with slower processing speed may take more time to pass the tokens. This setting allows adjusting token wait time as needed for HMI to wait for the token.
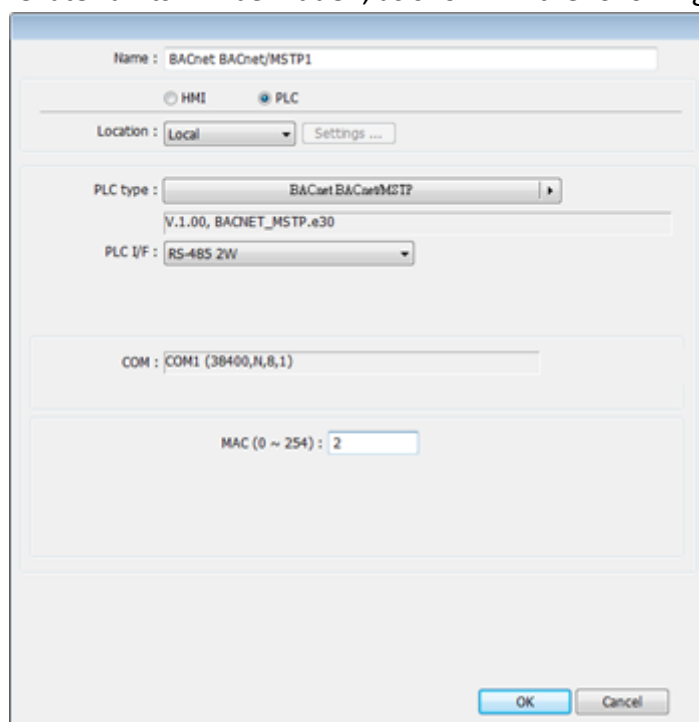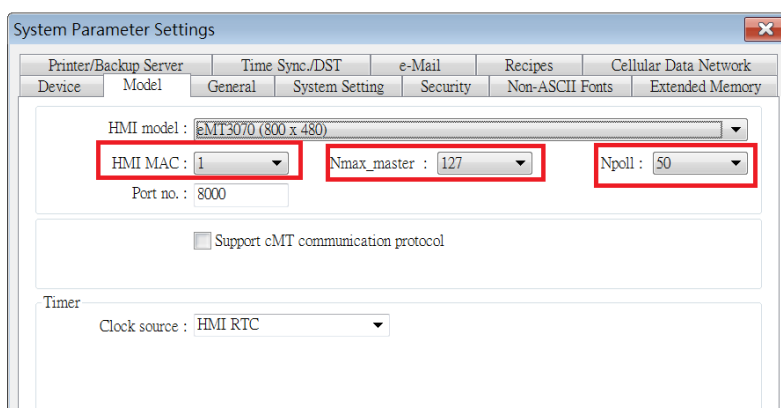

- Notes on connecting multiple units:

  To connect multiple BACnet MS/TP units, please add each of them in System Parameter Settings, and use different MACs. As shown in the following figure, two BACnet MS/TP units are to be connected, each uses different MAC.

Please note that in the case of connecting multiple units, the COM settings of all units will follow the settings of the first unit. That is, the COM settings from the second to the later units will be hidden, as shown in the following figure.

3. Go to System Parameter Settings » Model tab, and set up HMI as shown in the following figure.

- HMI MAC: The MAC of the HMI on MS/TP network, the range is from 1 to 127.
- Nmax_master: The highest allowable MAC on MS/TP network. The value shall be greater than HMI MAC. The range is from 2 to 127.
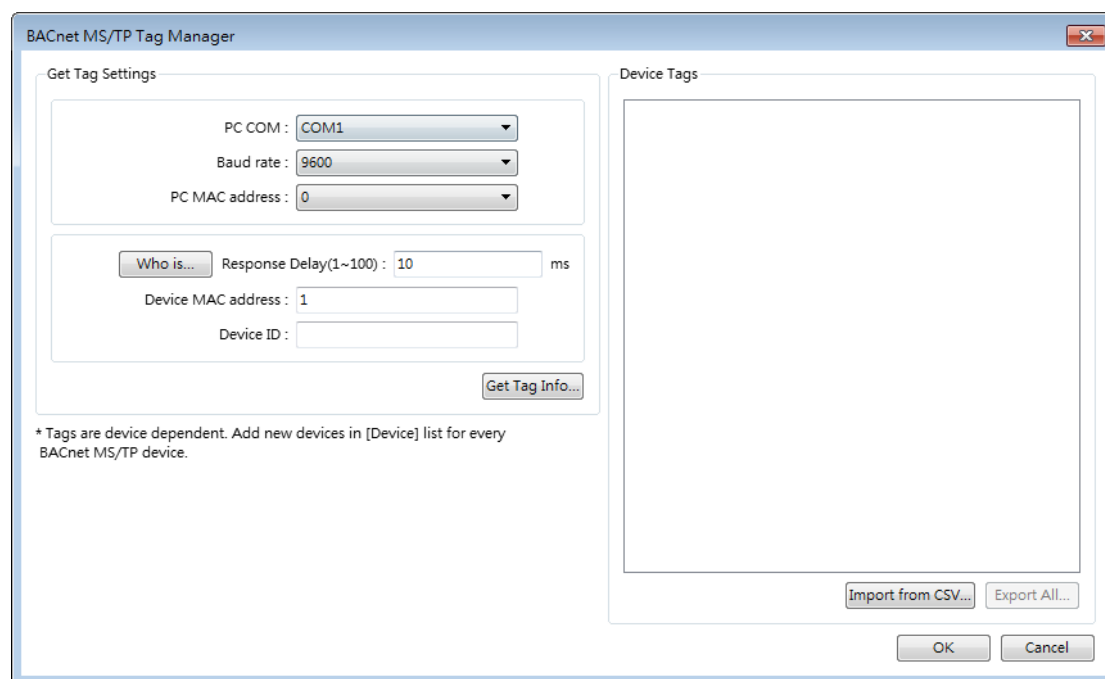
3

- Npoll: The number of tokens received before polling cycle is executed. A greater value means a lower polling frequency, and higher communication efficiency. A less value means a higher polling frequency, and a new device is allowed to be added in earlier.

2. Tag Manager

There are three ways to get MS/TP tags:

1. Connect BACnet MS/TP unit to a BACnet IP Adapter, and then open EasyBuilder Pro System Parameter Settings. Find BACnet IP driver, save the tags into .csv file, and then click [Import from CSV] button in Tag Manager of BACnet/MSTP device.
2. Connect BACnet MS/TP unit to PC via COM port, and then run the BACnet software on PC. Save the tags into .csv file, and then click [Import from CSV] button in Tag Manager.
3. Connect BACnet MS/TP unit to PC via COM port, and then click [Get Tag Info] button in Tag Manager, to get the MS/TP tags.

The device can only work when its tags are imported using Tag Manager.

To connect the COM port RS-232 of PC with the COM port RS-485 of BACnet MS/TP unit, please use a RS-232 to RS-485 converter. MS/TP requires high precision serial port baud rate, please use a precise converter.
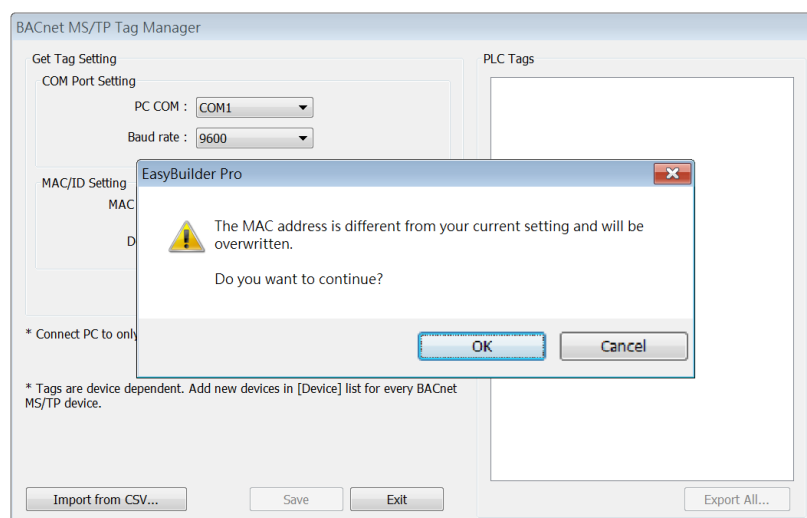
- COM Port Setting: The COM port used to connect PC (not HMI) with BACnet MS/TP unit.
- PC MAC address: Set the MAC address for PC to get tag on MS/TP network, please use a different MAC from other units on the same network.
- Response Delay (1~100): After a PC receives a command, it sends a response to BACnet MS/TP unit. For certain units that are not able to receive responses too

quickly, a longer response delay time may be needed.

- [MAC address], [Device ID], and [Get Tag Info]：Enter the MAC address and device ID of the BACnet MS/TP unit. By default, the MAC address will be the same as the one defined in EasyBuilder Pro device setting. If MAC address and device ID are both unknown, click [Scan Device] to find out. EasyBuilder Pro will retrieve the parameters of the unit, and the process may take a few minutes. After setting the parameters, click [Get Tag Info] to get the tags, and the process may take a few minutes. A message will show to remind that the current tags will be overwritten by the newly get tags. To continue the process, click OK.
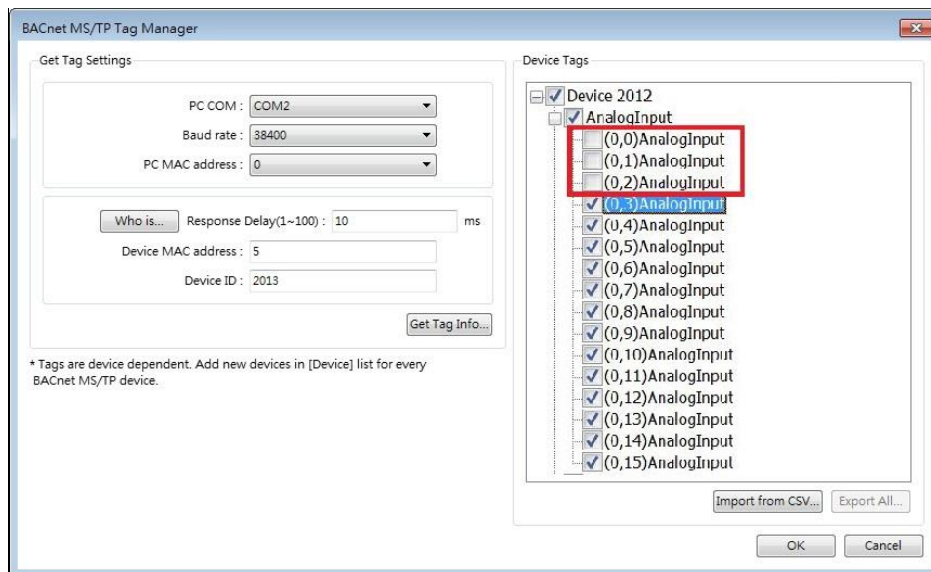
Notes

1. The MAC address and device ID of certain BACnet MS/TP units can be gained by clicking [Scan Device] only at the first time the unit is powered up. To get this information in the same way again, please power up the unit again.
2. Certain BACnet MS/TP units do not support [Scan Device] and [Get Tag Info].
3. If the MAC address gained by clicking [Scan Device] does not match the one specified in EasyBuilder Pro device settings, a message shows when [Get Tag Info] is clicked.
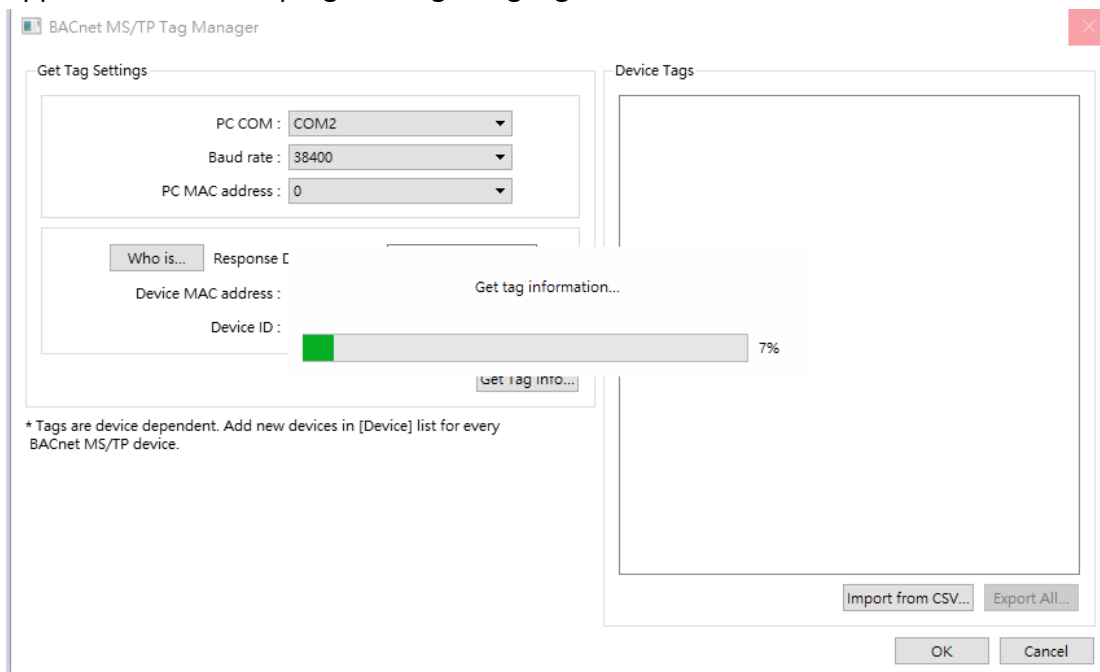

- Import from CSV: An external CSV or EDE file can be imported to EasyBuilder Pro. After importing the file, the Device ID will be automatically filled in, according to the data in the file.
- PLC Tags: Either the tags are obtained by clicking [Get Tag Info] or [Import from CSV], the tags will be displayed in the PLC Tags field after the process is done, and the tags will be imported to the project file.
  The tags with its check box selected in the PLC Tag field will be imported. After selecting the check boxes, click [Save], then the tags can be imported to
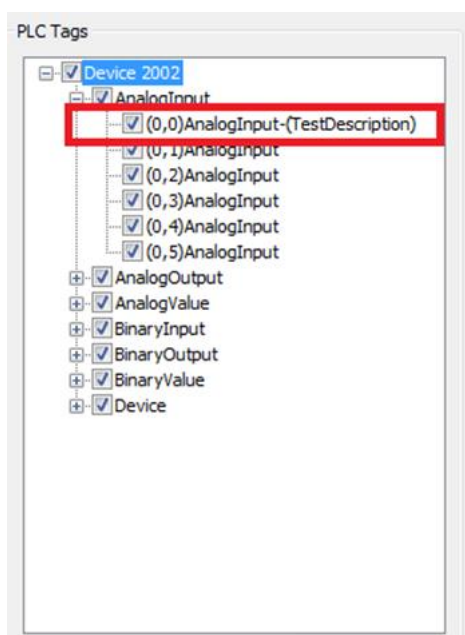
EasyBuilder Pro.

If the check box of a tag is not selected and [Save] button is clicked, the tag will disappear from the PLC Tags field at the next time Tag Manager is opened.

● After clicking [Get Tag Info], if the quantity of tags is large, a progress bar appears to show the progress of getting tag information.

If the tag contains DESCRI(description), in the PLC Tags field, a note will be enclosed in round brackets, for example, (0.0)AnalogInput-(TestDescription), as shown in the following figure.

Export All: Export all the tags in the project. Tags to be exported can be selected in PLC Tags field.

3. Data Types

The unsupported data types include

1. EventState(ID#36)
2. OutOfService(ID#81)

Objects that are not supported

1. Calendar
2. Schedule
3. Group