

# **BACnet/MSTP**

Supported series: BACnet/MSTP protocol devices

## HMI Setting:

Parameters	Recommended	Options	Notes
PLC type	BACnet/MSTP		
PLC I/F	RS485-2W		
Baud rate	38400	9600,19200, 38400	
Data bits	8		
Parity	None		
Stop bits	1		
Time out (sec)	1.0	0.05 ~ 25.5	
MAC	0	0 ~ 254	
HMI MAC	1	1 ~ 127	
Nmax_master	127	2 ~ 127	
Npoll	50	1 ~ 255	
Device MAC address	1		*Note1
Device ID	0		*Note1
Network Address	0		
Mac Layer Address Length	1		Use Destination Specifier *Note1
Mac(HEX)	0		

Online simulator	NO	Extend address mode	NO

\*Note1: Press "Who is" to connect to the device to automatically obtain parameters or enter parameters manually.



#### **Parameter Settings:**

#### Set MSTP parameters of PC

Connect the mstp device to the communication port of the PC. Follow the steps below to retrieve or directly set the communication parameters of the device.

[PC COM]: Set up the PC and device to connect to the com port

[Baud rate]: Set the Baud rate of the device

**[PC MAC Address]:** Set the BACnet MSTP MAC parameters of the PC. This setting item cannot be repeated with the device

**[Who is]:** Retrieve the parameters of the MSTP Device connected to the PC. If it cannot be retrieved, please check the above parameter settings.

[Use Destination Specifier]: Some MSTP devices will use [Destination Specifier], and the communication parameters need to be filled in [Network Address], [Mac Layer Address Length] and [MAC].

[Device MAC address]: Set the MAC address of MSTP Device [Device ID]: Set the ID of the MSTP Device

PC COM : COM	17 🔻
PC COMT. COM	11
Baud rate : 38400	0 -
PC MAC address : 2	•
✓ Use Destination Specifier	Who is
Use Destination Specifier Device MAC address :	Who is
Use Destination Specifier Device MAC address : Device ID :	Who is 1
Use Destination Specifier Device MAC address : Device ID : Network Address :	Who is 1 0 0



### How to Import Tags:

1. In EasyBuilder **System Parameter Settings** add **BACnet/MSTP** driver, set the communication parameters, and then click **Tag Manager** button.

	Cellular	Data Netwo	rk	Time Sync./DS	T	e-Mail	FTP
De	evice	Model	Genera	l System	Remote	Security	Extended Memor
Dev	ice list:						What's my
		Name	Location I	Device Type			
⊿	Local Hlv	I Local HMI	Local di	MT3072XH / oMT30722	KH2/oMT307	2XH2 (V2) / oMT3072	2XHT / 0MT3072XHT (V
<			New I	Device/Server	De	elete	Settings
<	New	HMI					
<	New	HMI Tag	Manager				

 Use a RS-232/RS-485 converter to connect the BACnet MS/TP unit with PC. Only one BACnet MS/TP unit is allowed. Set PC COM and Baud rate, click Who is button to find the MAC address and Device ID of the BACnet MS/TP unit.

Get Tag Setting			PLC Tags	
COM Port Settin	g			
	PC COM : COM6	~		
в	aud rate: 38400	*		
MAC/ID Setting				
MAC	address : 1	Scan Device		
C	Device ID :			
		Get Tag Info		
Connect PC to on	ly one BACnet MS/TP de	vice directly using COM port	above.	
Taga are device d	apandant. Add naw day	vices in [Device] list for ever		
ACnet MS/TP devi	ce.	recently period list for every	Y	



3. If the device is found, the following message shows, click **OK**.



4. After getting the **MAC address** and **Device ID**, click **Get Tag Info** button to get the address tags.

	BACnet MS/	TP Tag Manager	
Get Tag Settings		Device Tags	
PC COM :	COM8 •		
Baud rate :	38400 -		
PC MAC address :	• •		
Use Destination Specifier	Who is		
Device MAC addres	s: 5		
Device II	D: 2013		
lags are device dependent. Add new de ACnet MS/IP device.	Get Tag Info		
		Import from CSV	Export AIL

5. If the tags are obtained successfully, the following message shows, click OK.







 In the Device Tags field, the tags with its check box selected can be imported. Click OK to complete the address import.

Click **Export All**, to save the address tags as CSV file. If tag infomation cannot be obtained when creating a project, use **[Import from CSV]** to obtain tag information.

BACnet MS/TP	Tag Manager	×
Get Tag Settings          Get Tag Settings         PC COM:         Baud rate:         Bud rate:         Device MAC address:         0         Device MAC address:         5         Device ID:         2013         Get Tag Info         * Tags are device dependent. Add new devices in [Device] list for every BACnet MS/TP device.	Device Tags	from CSV Export All
	L	C.A. Carret

7. To connect another BACnet/MSTP unit, please add the BACnet/MSTP driver in EasyBuilder System Parameter Settings again. The communication parameters will follow the settings of the firstly added unit. The way to get tag information is the same as illustrated in the preceding steps. Another way to get tag information is to click [Import form CSV] button in Tag Manager.

Printer/	Printer/Backup Server Time Sync./DST e-Mail Recipes Cellular Data Network							
Device	Model	General	System S	System Setting Security Non-ASCII F		CII Fonts	onts Extended Memory	
No.	evice list : <u>What's my IP ?</u>							
Local	HMI L	ocal HMI	Local	eMT31	05 (800	-	-	0
		ACnet BACn	e Local	BACne	t BACne	MAC 102, CON	I RS485	2W N/A
Local	PLC I B							

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].



 If the MAC address gained by clicking [Scan Device] does not match the one specified in EasyBuilder Pro Device Properties settings, a message shows as a reminder when [Get Tag Info] is clicked.

### **MSTP Model:**

After adding the driver and importing the tag, the user needs to set the MSTP Model. The setting path is as follows:

[System Parameter Settings] -> [Model]

-[HMI MAC]: Set BACNET MSTP MAC parameters for HMI

-[Nmax\_master]: Set the maximum MAC in the domain

-[Npoll]: Set the interval for sending polling packets (50 means that after receiving 50 tokens, polling will continue)

System Parameter Settings ×								
Cellu Device	ular Data Network Model	General	Time Sync./D System	ST Remote	e-Mail Security	Extended M	emory	
	HMI model : d	MT3072XH / d	MT3072XH2 / cMT	3072XH2 (V2)	/ cMT3072X ∨	Landscape	~	
	HMI MAC : 1	· ·	Nmax_ma	ster : 127	~	Npoll: 50	~	
	Port no. : 8	000						
	Support TK/iP/iE/XE/eMT/mTV communication protocol and EasyWatch							



# Default Object Model:

Object ID	Object Name	Object Structure
0	Analog Input	ObjectName
		ObjectIdentifier
		ObjectType
		PresentValue
		PresentValue Array
		EventState
		OutOfService
		Units
		SubscribeCovTime
		HighLimit
		LowLimit
		DeadBand
		NotificationClass
		LimitEnable
		EventEnable
		NotifyType
		TimeDelay
		AckedTransitions
1	Analog Output	ObjectName
		ObjectIdentifier
		ObjectType
		PresentValue
		PresentValueArray
		EventState
		OutOfService
		Units
		Priority
		PriorityReset
		PriorityArray
		RelinquishDefault
		HighLimit
		LowLimit
		DeadBand
		NotificationClass
		LimitEnable
		EventEnable

	EK .	_	PLC Connection Guide
Object ID	Object Name	Object Structure	
		NotifyType	
		TimeDelay	
		AckedTransitions	
2	Analog Value	ObjectName	
		ObjectIdentifier	
		ObjectType	
		PresentValue	
		PresentValueArray	
		EventState	
		OutOfService	
		Units	
		Priority	
		PriorityReset	
		PriorityArray	
		RelinquishDefault	
		HighLimit	
		LowLimit	
		Dead Band	
		NotificationClass	
		LimitEnable	
		EventEnable	
		NotifyType	
		TimeDelay	
		AckedTransitions	
3	Binary Input	ObjectName	
		ObjectIdentifier	
		ObjectType	
		PresentValue	
		PresentValueArray	
		EventState	
		OutOfService	
		Polarity	
		AlarmValue	
		NotificationClass	
		EventEnable	
		NotifyType	
		TimeDelay	
		AckedTransitions	

	EK		PLC Connection Guide
Object ID	Object Name	Object Structure	
4	Binary Output	ObjectName	
		ObjectIdentifier	
		ObjectType	
		PresentValue	
		PresentValueArray	
		EventState	
		OutOfService	
		Priority	
		PriorityReset	
		PriorityArray	
		Polarity	
		AlarmValue	
		NofificationClass	
		EventEnable	
		NotifyType	
		TimeDelay	
		AckedTransitions	
		RelinquishDefault	
5	Binary Value	ObjectName	
		ObjectIdentifier	
		ObjectType	
		PresentValue	
		PresentValueArray	
		EventState	
		Priority	
		PriorityReset	
		PriorityArray	
		OutOfService	
		AlarmValue	
		NotificationClass	
		EventEnable	
		NotifyType	
		TimeDelay	
		AckedTransitions	
		RelinquishDefault	
7	Command	ObjectName	
		ObjectIdentifier	
		ObjectType	

	EK		PLC Connection Guide
Object ID	Object Name	Object Structure	
		InProcess	
		AllWritesSuccessful	
8	Device	ObjectName	
		ObjectIdentifier	
		ObjectType	
		SystemStatus	
		VendorName	
		Vendorldentifier	
		ModelName	
		FirmwareRevision	
		ApplicationSoftwareVersion	
		ProtocolVersion	
		ProtocolRevision	
		MaxAPDUlengthAccepted	
		SegmentationSupported	
		ApduTimeout	
		NumberOfAPDUretries	
		DataBaseRevision	
		MaxSegmentsAccepted	
		UtcOffset	
		DaylightSavingsStatus	
		ApduSegmentTimeout	
		BackupFailureTimeout	
10	File	ObjectName	
		ObjectIdentifier	
		ObjectType	
		FileType	
		FileSize	
		Archive	
		ReadOnly	
13	Multi State	ObjectName	
	Input	ObjectIdentifier	
		ObjectType	
		PresentValue	
		EventState	
		OutOfService	
		NumberOfStates	
		AckedTransitions	

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WEINT	EK		PLC Connection Guide
Object ID	Object Name	Object Structure	
14	Multi State	ObjectName	
	Output	ObjectIdentifier	
		ObjectType	
		PresentValue	
		EventState	
		OutOfService	
		NumberOfStates	
		Priority	
		PriorityReset	
		PriorityArray	
		AckedTransitions	
		RelinquishDefault	
16	Program	ObjectName	
		ObjectIdentifier	
		ObjectType	
18	Averaging	ObjectName	
		ObjectIdentifier	
		ObjectType	
		MinimumValue	
		AverageValue	
		MaximumValue	
		AttemptedSamples	
		ValidSamples	
		Window nterval	
		WindowSamples	
19	Multi State	ObjectName	
	Value	ObjectIdentifier	
		ObjectType	
		PresentValue	
		EventState	
		OutOfService	
		NumberOfStates	
		Priority	
		PriorityReset	
		PriorityArray	
		AckedTransitions	
		RelinquishDefault	
20	Trend Log	ObjectName	

	EK		PLC Connection Guide
Object ID	Object Name	Object Structure	
		ObjectIdentifier	
		ObjectType	
		Enable	
		StopWhenFull	
		BufferSize	
		RecordCount	
		TotalRecordCount	
21	Life Safety	ObjectName	
	Point	ObjectIdentifier	
		ObjectType	
		PresentValue	
		TrackingValue	
		EventState	
		Reliability	
		OutOfService	
		Mode	
		Silenced	
22	Life Safety	ObjectName	
	Zone	ObjectIdentifier	
		ObjectType	
		PresentValue	
		TrackingValue	
		EventState	
		Reliability	
		OutofService	
		Mode	
		Silenced	
23	Accumulator	ObjectName	
		ObjectIdentifier	
		ObjectType	
		PresentValue	
		PresentValueArray	
		EventState	
		OutOfService	
		Scale	
		Units	
24	Pulse	ObjectName	
	Converter	ObjectIdentifier	

WEINTEK PLC			PLC Connection Guide
Object ID	Object Name	Object Structure	
		ObjectType	
		PresentValue	
		EventState	
		OutOfService	
		Units	
		ScaleFactor	
		AdjustValue	
		Count	

Note : Object name can not include "#".

## Wiring Diagram:

#### RS-485 2W

The serial port pin assignments may vary between HMI models, please click the following link for more information.

НМІ		PLC
<u>Link</u>		RS485 2W Terminal
Data-	←	Data-
Data+	<>	Data+
GND	<>	GND