

# Field Control Layer Device

# PC-Mxxx

## Modbus to BACnet Protocol Interface

### 【 Description 】

PC-Mxxx is a protocol conversion controller that complies with the BACnet B-AAC level dedicated programmable and independent operation.

It uses a 32-bit microprocessor, which can convert the commonly used MODBUS data to the BACnet data.

PC-Mxxx is often used to integrate equipment manufactured by different manufacturers in buildings. For example, constant temperature and humidity air-conditioning unit, network-based fan coil unit, chiller unit, lighting control system, multi-function electric meter system, fire protection Alarm system, elevator control system and other facilities.

PC-Mxxx has two types: 1. Converter data for a control. 2. Converter data not for a control (PC-Mxxx-N). When the integration requirements are irrelevant control or data feedback applications that can allow a longer time, such as electricity meters and water meters data collection, you can choose the pure data converter model PC-Mxxx-N , To provide you with a more cost-effective choice.



### 【 Feature 】

- BACnet Advanced Application Controller (B-AAC) level device.
- Peer to peer read/write another BACnet device.
- 10/100M Ethernet port \* 3 which can be set to be BACnet Ethernet, BACnet/IP, or MODBUS/TCP Server communication protocol. Convert BACnet AV/BV to and from MODBUS Register/Coil. Its MODBUS/TCP Server mode mapped BACnet AV or BV points to MODBUS Register or Coil for another MODBUS/TCP client to read or write.
- A MODBUS RTU/ASCII Master RS-485 ports for connecting to MODBUS RTU/ASCII Slave devices. LED indicator shows port communication status.
- Built-in MODBUS RTU RS-485 serial communication interface with indicator light and 2,500Vrms anti-interference potential isolation. Can be set as MODBUS RTU Master to connect various MODBUS RTU Slave devices; can also be set as MODBUS RTU Slave for other MODBUS RTU Master devices to read.
- USB Type-C interface, connected to a PC, allows you to configure the controller's internal network parameters using terminal software.
- Programmable, online edits mathematic operations such as add/subtract/multiply/divide and logic operations such as AND, OR in program for flexible data usage and control.
- 100/200/500/1000 AV or BV points for data exchange between different protocol sources.
- User can set a block data transfer, which saves communication time than one-by-one data transfer. Block size depends on the maximum size of MODBUS buffer available.
- Each analog point can be selectable do one time add/subtract/multiply/divide operation to adjust its value. This function eliminates the ratio or value adjustment operation in BACnet application level.
- Power failure backup function, data keep in FRAM.

# 【 Specification 】

Model	Exchange Data Point	Modbus			BACnet			Function		
		TCP Client	TCP Server	RS-485	IP	Ethernet	MS/TP	Schedule	Alarm	DDC Program
PC-ME10-XS	100	V	V		V	V		10	20	32Kb
PC-ME11-XS			V	V	V	V				
PC-MP11-XS				V			V			
PC-ME10-XS-N		V	V		V	V		X	X	X
PC-ME11-XS-N			V	V	V	V				
PC-MP11-XS-N				V			V			
PC-ME10-S	200	V	V		V	V		20	40	32Kb
PC-ME11-S			V	V	V	V				
PC-MP11-S				V			V			
PC-ME10-S-N		V	V		V	V		X	X	X
PC-ME11-S-N			V	V	V	V				
PC-MP11-S-N				V			V			
PC-ME10-M	500	V	V		V	V		50	100	32Kb
PC-ME11-M			V	V	V	V				
PC-MP11-M				V			V			
PC-ME10-M-N		V	V		V	V		X	X	X
PC-ME11-M-N			V	V	V	V				
PC-MP11-M-N				V			V			
PC-ME10-L	1000	V	V		V	V		50	100	32Kb
PC-ME11-L			V	V	V	V				
PC-ME10-L-N		V	V		V	V		X	X	X
PC-ME11-L-N			V	V	V	V				

**Power Supply** : 24VAC/DC, 3VA(Half Wave Rectification) ◦

**Microprocessor** : 32-bit high performance MCU, 128K RAM, 32K FRAM and 512K Flash memory.

**Config Interface** : USB Type-C interface, connected to a PC, allows you to set the controller's internal network parameters using terminal software.

**Ethernet Port** : 10/100M Ethernet interface \* 3, can be either BACnet Ethernet or BACnet IP communication protocol.  
(Only PC-ME10 and PC-ME11 have the Ethernet port. PC-MP11 has no Ethernet port).

**TDnet Port** : MODBUS RTU RS-485 port is selectable to be Master or Slave. Master can connect 32 Slave devices. Communication speed can be 1200/2400/4800/9600/19200/38400/76800 BPS.  
(Only PC-ME11 and PC-MP11 have TDnet port. The PC-ME10 has no TDnet Port).

**Protocol Convert** : Convert data between MODBUS RTU (Register/Coil) and BACnet (AV/BV).

**Real Time Clock** : Gold capacitor keeps its clock when power failure.

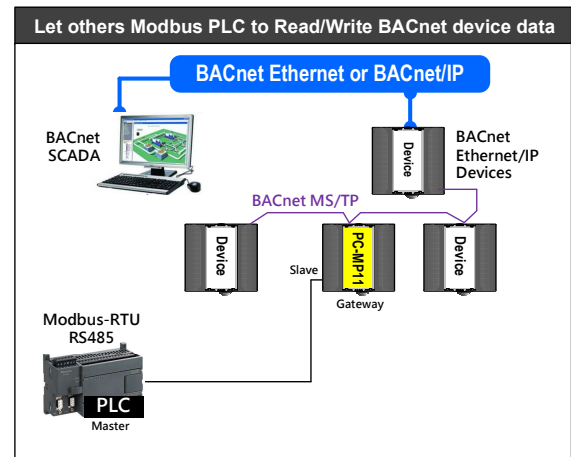
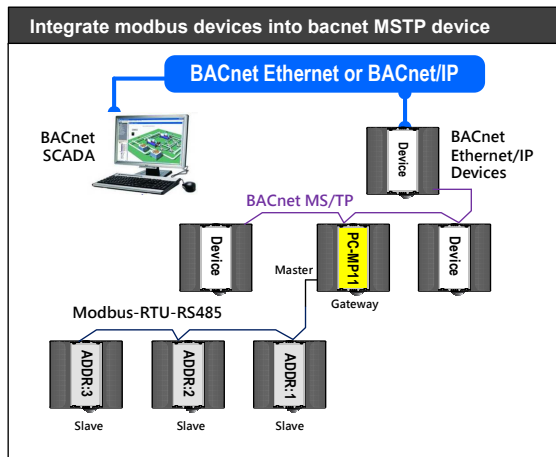
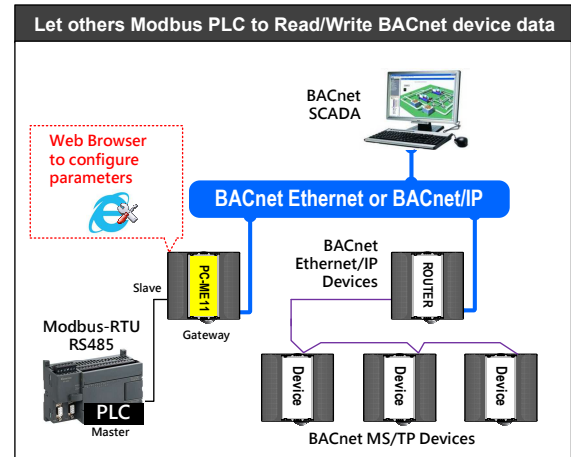
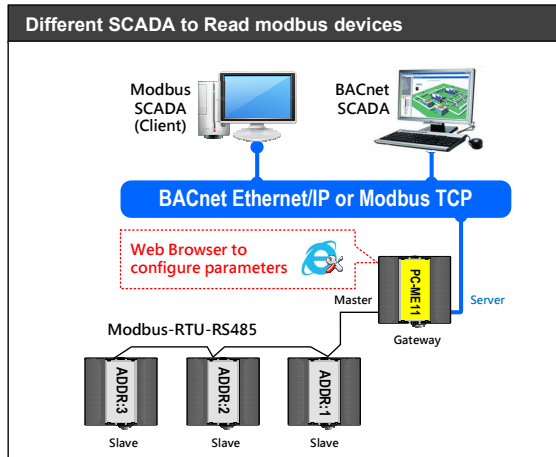
**Environment** : 0~50°C, 20~90%RH ◦

**Certification** : CE (EMC Directive 2004/108/EC).

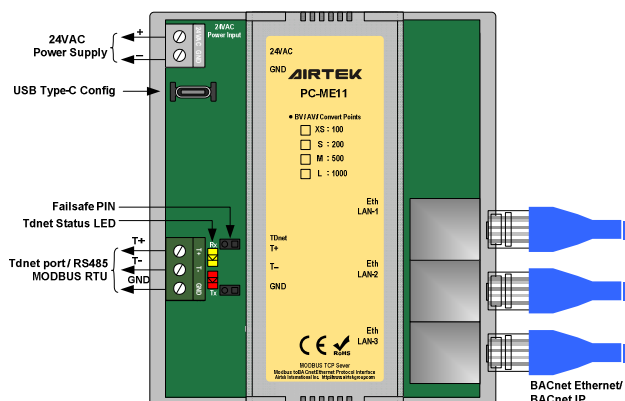
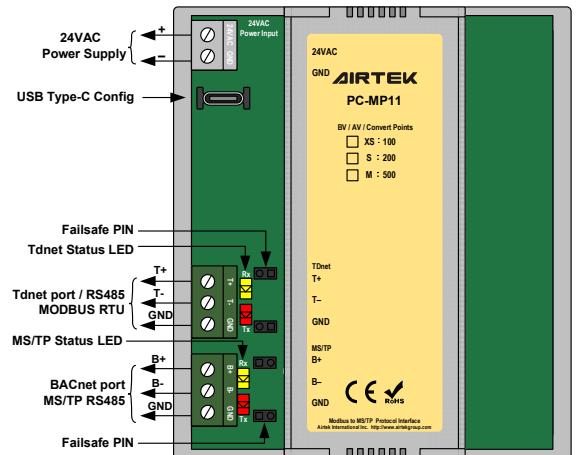
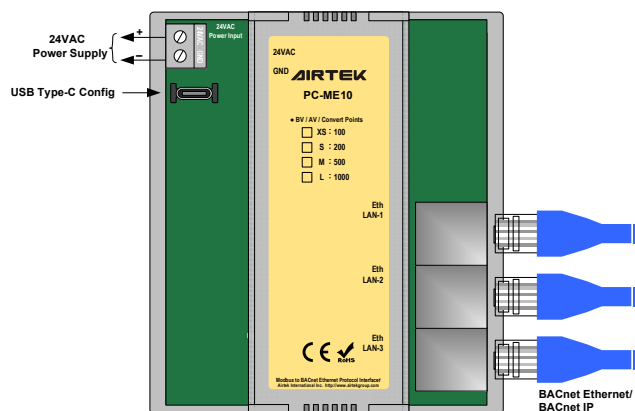
## 【 Installation 】

- The power supply cannot be shared with other full-wave rectifier controllers or converters to avoid the controller from being burned out by the short cycle of the power circuit.
- Allow other TCP Client devices to read and write data, the TCP/IP Port number is preset to 502 and can be adjusted
- RS-485 MODBUS RTU communication port
- The actual number of MODBUS RTU communications that can be connected is determined by the characteristics of the connected components, the amount of data and the data format. Generally, the RS-485 network can only connect up to 32 standard components. If the number exceeds this number, a Repeater must be installed.
- The total number of slave devices connected to the MODBUS RS-485 communication port is determined by component characteristics, data volume and data format. User must be avoid overload of its communication.
- MODBUS RS-485 network terminal is recommended to install 120Ω terminal resistance to ensure the signal quality. The integrated device must have MODBUS RS-485 communication capability, and the communication protocol must be the standard MODBUS RTU protocol Slave format.

## 【Application】



## 【Wiring】



## 【Dimension】 Unit : mm

