Smart Meter for
Smart Consumers for
Smarter Buildings

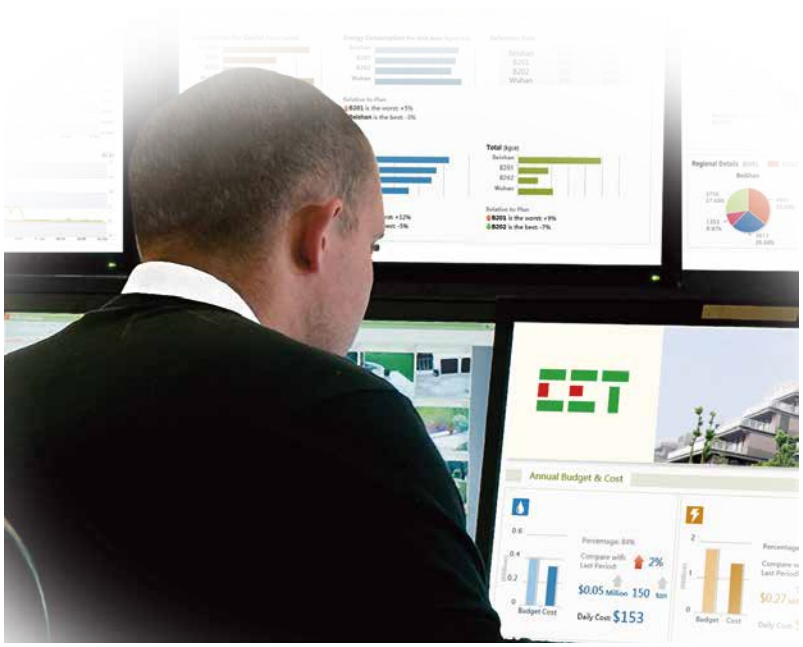
PMC-53A

BACnet Compatible Multifunction Meter for Building Energy Management Systems (BEMS)

PMC-53A is a cost-effective and versatile power and energy meter for the building automation market that requires the BACnet MS/TP, Metasys N2 or Modbus RTU protocol. The PMC-53A provides seamless integration of electrical measurements including power, energy, voltage, current, power factor, harmonics, etc. with any BEMS.

Feature Highlights

- Selectable BACnet MS/TP, Metasys N2, Modbus RTU and DNP 3.0
- True RMS Measurements @ 64 samples/cycle
- IEC 62053-22 Class 0.5S Compliant
- Panel Meter: 96x96x88mm (92x92mm Cutout)
- 1P2W, 1P3W, 3P3W & 3P4W configurations
- VLN/VLL: 120/208, 277/480, 347/600 & 400/690 VAC
- 1-cycle real-time V&I waveform display
- 31 Ind. Harmonics, THD, TDD, K-Factor, CF, dPF
- Optional I4 with Calculated Residual Current Ir
- Leakage Current measurement via optional AI
- Universal power supply, 95-250 VAC/DC
- Optically isolated RS-485 port at max. 38,400 bps
- Optional 2nd RS-485 port (Modbus RTU only)
- Optional I/Os for monitoring and control



Applications

The PMC-53A features the BACnet MS/TP protocol which allows it to be directly and conveniently integrated into any Building Energy Management Systems (BEMS) without requiring external protocol conversion. The addition of digital power/energy meters such as the PMC-53A facilitates:

- **Real-time energy consumption monitoring**
- **Locating potential energy wastage**
- **Effective energy usage optimization**
- **Demand reduction**
- **Cost allocation**

The PMC-53A facilitates departmental cost allocation as well as tenants sub-metering for their electrical consumption and billing. Energy data from sub-meters can also be used to improve building operations and detect abnormal equipment behaviors. Building operators can use energy consumption trends to identify unusual consumption patterns and verify the effectiveness of energy conservation measures as per the ISO 50001 EnMS standard.

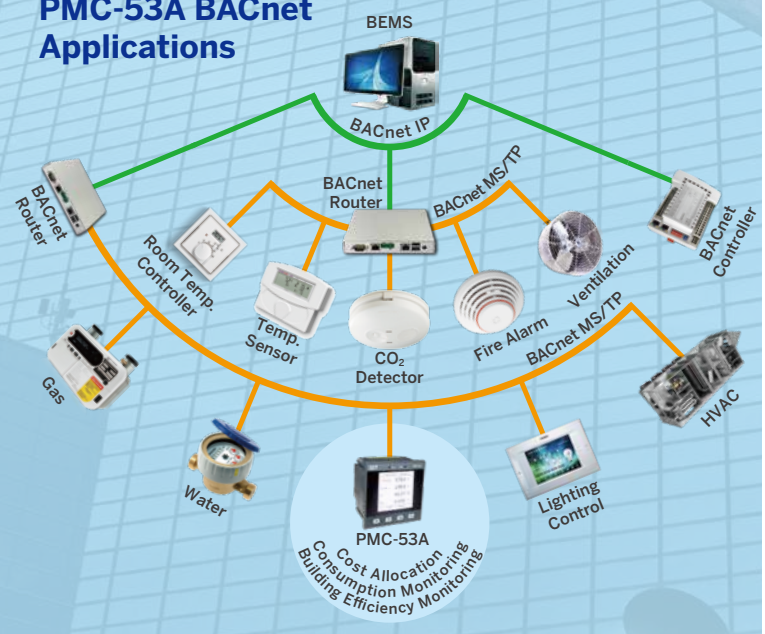
BACnet is designed to promote interoperability among various hardware devices and software applications for Building Automation Control and Management, which includes Heating, Ventilating and Air Conditioning (HVAC), Lighting, Security Access and Fire Detection systems as well as their associated equipment. The BACnet protocol defines a standard for information exchange among building automation devices and applications regardless of manufacturers or the particular building service that they perform.

BACnet Objects

The PMC-53A supports five types of BACnet objects, which can be easily integrated into any BACnet compatible BEMS such as JCI Metasys, Reliable Controls, Contemporary Controls, Delta Controls, Optergy...etc. The monitoring, control and management of electrical loads can be performed in a similar fashion that BACnet objects are used to represent custom operation sequences for mechanical equipment.

- Device Object – Device Properties
- Analog Input Object – Real-Time Parameters
- Analog Value Object – Setup Parameters
- Binary Input Object – Digital Inputs
- Binary Output Object – Digital Outputs

PMC-53A BACnet Applications



Measurements

*All measurements are available in Modbus RTU protocol, but some measurements may not be available in BACnet MSTP, Metasys N2 or DNP 3.0.

Electrical, Power & Energy

- VLN, VLL per phase and Average
- Current per phase and Average with calculated Neutral
- kW, kvar, kVA, P.F. per phase and Total
- kWh, kvarh Import/Export/Net/Total, kVAh Total & kvarh Q1-Q4
- Frequency
- Optional I4 measurement
- Calculated Residual Current Ir

Advanced Measurements

- THD, TOHD, TEHD and Individual Harmonics up to 31st
- TDD, K-Factor, Crest Factor and Displacement P.F.
- U and I Unbalance and Phase Angles
- Fundamental kW per Phase
- Total Fundamental kW & Total Harmonic kW

Optional Inputs and Outputs

The PMC-53A provides various I/O options in the form of factory-installed expansion modules to suit different applications. These I/O signals can easily be integrated into any BEMS for monitoring and control purposes.

Digital Inputs

- Up to 6 channels, volts free dry contact, 24VDC internally wetted
- 1000Hz sampling for status monitoring with programmable debounce
- Pulse counting with programmable weight for each channel for collecting WAGES (Water, Air, Gas, Electricity, Steam) information

Relay Outputs

- Up to 4 Form A mechanical relays for alarming and control purpose

Pulse Outputs

- 2 solid state relays for energy pulsing applications

Analogue I/O

- 1xAI and 1xAO (0/4-20mA)

Temperature Monitoring

- 2xRTD Input (PT100 sensor not included)

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Your Local Representative

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