



- IEC 62053-22 Class 0.5S
- Harmonics Monitoring
- Demands and Peak Demands
- Voltage & Current Phase Angles
- I/O Capabilities
- RS-485 Port at max. 38,400 bps
- Metasys N2 and BACnet MS/TP
- Large, Bright, Backlit LCD Display with Wide Viewing Angle
- Standard Tropicalization
- Industrial Grade Components
- IP52 Enclosure with No Openings
- Extended Temperature Range
- Extended Warranty

Designed For Reliability

Manufactured To Last



The PMC-53M Intelligent Multifunction Meter is CET's latest offer for the low-cost digital power/energy metering market. Housed in an industry standard DIN form factor measuring 96mmx96mmx75mm, it is perfectly suited for industrial, commercial and utility metering applications. The PMC-53M features quality construction, multifunction measurements and a large, backlit, easy to read LCD display. Compliance with the IEC 62053-22 Class 0.5S kWh Accuracy Standard, it is a cost effective replacement for analog instrumentation, capable of displaying 3-phase measurements at once. It optionally provides two Digital Inputs for status monitoring and two Digital Outputs for control, alarm or energy pulsing applications. With the Metasys N2 and BACnet MS/TP protocol support, the PMC-53M can easily be integrated into Johnson Controls or other Building Automation Systems.

Typical Applications

- Analog meter replacement for low and medium voltage applications
- Industrial and commercial panel metering
- Substation, industrial, factory and building automation
- Sub-metering and cost allocation
- Power quality monitoring
- Simple BMS integration with Metasys N2 and BACnet MS/TP

Accuracy

| Parameters | Accuracy | Resolution |
|------------------|----------------------------|-------------------|
| Voltage | ±0.2% reading | 0.01V |
| Current | ±0.2% reading + 0.05% F.S. | 0.001A |
| Neutral Current* | 1% F.S. | 0.001A |
| kW, kVA | IEC 62053-22 Class 0.5S | 0.001k |
| kWh, kVAh | IEC 62053-22 Class 0.5S | 0.1kWh |
| kvar / kvarh | IEC 62053-21 Class 2 | 0.001k / 0.1kvarh |
| P.F. | IEC 62053-22 Class 0.5S | 0.001 |
| Frequency | ±0.02 Hz | 0.01Hz |
| THD* | IEC 61000-4-7 Class B | 0.1% |
| K-Factor* | IEC 61000-4-7 Class B | 0.1 |
| Phase angles* | ±1° | 0.01° |

Features Summary

Measurements

- VLN, VLL per phase and Average
- Current per phase and Average
- kW, kvar, kVA, PF per phase and Total
- kWh, kvarh Import / Export and kVAh Total
- Bi-directional energy measurements
- Frequency

Enhanced Measurements*

- Neutral Current
- kW Total, kvar Total, kVA Total and Current Demands/Peak Demands
- Voltage and Current Unbalance, THD and K-Factor, Displacement PF
- Voltage and Current Phase Angles

* Supported by Firmware Version 1.20.01 and Protocol Version 6.0 or later

Ease of use

- Large, backlit, easy to read, 5-line LCD display with wide viewing angle
- Password-protected setup via front panel or free PMC Setup software
- Easy installation with mounting clips, no tools required
- Built in alarm buzzer for optional I residual and Temperature alarms
- kWh and kvarh energy pulse outputs for accuracy testing

Setpoints

- 6 user programmable setpoints
- Configurable thresholds, time delays and DO triggers

SOE Log

- 32 events time-stamped to ±1ms resolution
- Setup changes, Setpoint and DI status changes and DO operations

Communications

- Optically isolated RS485 port at max. 38,400 bps
- Metasys N2 and BACnet MS/TP

System Integration

- Easy integration into Johnson Controls Metasys with N2 or any Building Automation Systems with BACnet MS/TP

Optional Features

Digital Inputs and Outputs

- Digital Inputs - 2 volts free dry contact, 24VDC internally wetted
- Digital Outputs - 2 Form A DO (mechanical) or Solid State (SS) relays
 - 2 DO relays for ALARM, TRIP, or general purpose control
 - 2 SS relays for kWh and kvarh pulsing

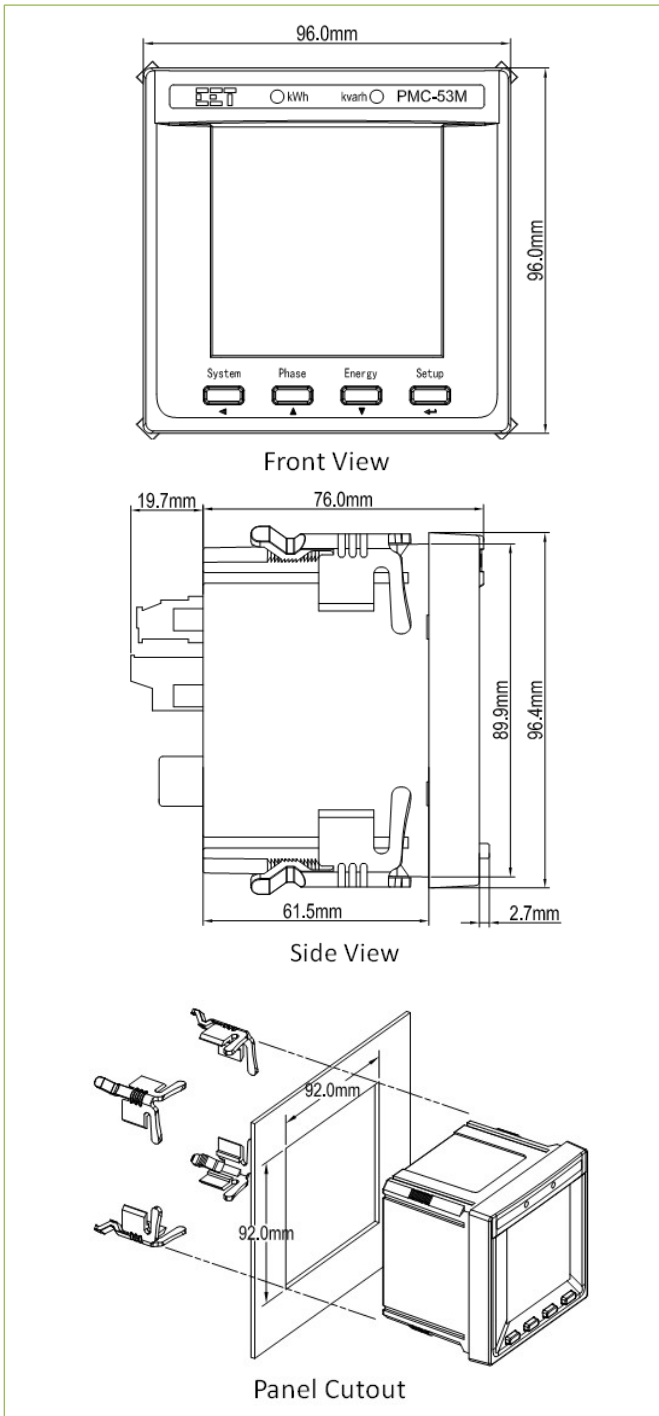
Technical Specifications

| Voltage Inputs (V1, V2, V3, VN) | |
|---|---|
| Standard | 240VLN/415VLL |
| Optional | 57.7VLN/100VLL |
| Range | 10% to 110% Un |
| PT Ratio | 1-2200 |
| Overload Burden | 1.1xUn continuous, 2xUn for 1s <0.1VA per phase |
| Frequency | 45-65Hz |
| Current Inputs (I11, I12, I21, I22, I31, I32) | |
| Standard | 5A |
| Optional | 1A |
| Range | 0.1% to 120% In |
| CT Ratio | 1-6,000 (5A) or 1-30,000 (1A) |
| Overload Burden | 1.2xIn continuous, 20xIn for 1s <0.3VA per phase |
| Power Supply (L+, N-, GND) | |
| Standard | 95-250VAC/DC, ±10%, 47-440Hz |
| Burden | <3W |
| Digital Inputs (DI1, DI2, DIC) | |
| Type | Dry contact, 24VDC internally wetted |
| Sampling | 1000Hz |
| Hysteresis | 40ms minimum |
| Digital Outputs (DO11, DO12, DO21, DO22) | |
| Type | Form A Mechanical Relay |
| Loading | 5A @ 250VAC or 30VDC |
| Pulse Outputs (kWh, kvarh) | |
| Type | Form A Solid State Relay |
| Isolation | Optical |
| Max. Load Voltage | 80V |
| Max. Forward Current | 50mA |
| Environmental Conditions | |
| Operating Temp. | -25°C to 70°C |
| Storage Temp. | -40°C to 85°C |
| Humidity | 5% to 95% non-condensing |
| Atmospheric Pressure | 70 kPa to 106 kPa |
| Mechanical Characteristics | |
| Panel Cutout | 92x92 mm (3.62"x3.62") |
| Unit Dimensions | 96x96x75 mm (3.8"x3.8"x3.0") |
| IP Rating | 52 |
| Shipping Weight | 0.55 kg |
| Shipping Dimensions | 170x160x150 mm (6.7"x6.3"x5.9") |
| Measurement Category | III |

Standards of Compliance

| Safety Requirements | | |
|--|-----------|------------------------------------|
| CE LVD 2006 / 95 / EC | | EN61010-1-1-2 001 |
| Insulation | | IEC 60255-5-00 |
| 20 | | |
| Dielectric test: 2kV @ 1 minute | | |
| Insulation resistance: >100MΩ | | |
| Electromagnetic Compatibility | | |
| CE EMC Directive 2004/108/EC (EN 61326: 2006) | | |
| Immunity Tests | | |
| Electrostatic discharge | | IEC 61000-4-2: 2008 Level III |
| Radiated fields | | IEC 61000-4-3: 2008 (10 V/m) |
| Fast transients | | IEC 61000-4-4: 2004 Level III |
| Surges | | IEC 61000-4-5: 2005 Level III |
| Conducted disturbances | | IEC 61000-4-6: 2008 Level III |
| Magnetic Fields | | IEC 61000-4-8: 2009 Level IV |
| Oscillatory waves | | IEC 61000-4-12: 2006 Level III |
| Electromagnetic Emission | | IEC 60255-25: 2 000 |
| Emission Tests | | |
| Limits and methods of measurement of electromagnetic disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment | | EN 55011: 2009 (CISPR 11) |
| Limits and methods of measurement of radio disturbance characteristics of information technology equipment | | EN 55022: 2006 A1: 2007 (CISPR 22) |
| Limits for harmonic current emissions for equipment with rated current ≤16 A | | EN 61000-3-2: 2006+A1: 2009 |
| Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤16 A | | EN 61000-3-3: 2006 |
| Emission standard for residential, commercial and light-industrial environments | | EN 61000-6-3: 2007 |
| Electromagnetic Emission Tests for Measuring Relays and Protection Equipment | | IEC 60255-25: 2 000 |
| Mechanical Tests | | |
| Vibration Test | Response | IEC 60255-21-1:1998 Level I |
| | Endurance | IEC 60255-21-1:1998 Level I |
| Shock Test | Response | IEC 60255-21-2:1998 Level I |
| | Endurance | IEC 60255-21-2:1998 Level I |
| Bump Test | | IEC 60255-21-2:1998 Level I |

Device View and Dimensions



Ordering Information

| Product Code | Description |
|---|---|
| PMC-53M Intelligent Multifunction Meter | |
| Basic Function | |
| M | 3-phase real-time multi-function parameters |
| Input Current | |
| 5 | 5A |
| 1 | 1A |
| Input Voltage | |
| 1 | 57.7/100V |
| 3 | 240/415V |
| 9 | 415V Delta |
| Power Supply | |
| 2 | 95-250VAC/VDC, 47-440Hz |
| 3 | 20-60VDC |
| System Frequency | |
| 5 | 50Hz |
| 6 | 60Hz |
| I/O | |
| X | None |
| B* | 2DI + 2DO |
| C* | 2DI + 2 SS Pulse Outputs |
| Display Screen | |
| C | LCD |
| Residual and RTD Inputs | |
| X | None |
| Communications | |
| C | 1xRS-485 Port, BACnet MS/TP + Metasys N2 |
| Display Language | |
| E | English |
| PMC-53 M - 5 3 2 5 X C X C E | PMC-53M-5325XCXCE (Standard Model) |

* Additional charges apply

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