




PMC-512-A

AC Multi-Circuit Power Monitor

-  Data Center and Telecom Base Station PDUs
-  Industrial and Commercial Distribution Boards
-  Other High-Density, Multi-Circuit Monitoring Applications

Product Introduction

PMC-512-A is CET's latest offer for the economical multi-circuit monitoring of Data Centers, Telecom Base Stations, Industrial & Commercial Buildings. Housed in a compact DIN Rail Mount enclosure, the PMC-512-A is perfectly suited for high-density metering applications. The PMC-512-A features quality construction with multifunction and Class 1 Energy Measurements. The PMC-512-A comes standard with a built-in LCD display, 12xDIs for status monitoring, 1xDO for control or alarming. The standard SOE Log records all setup changes, alarms and DI/DO operations in 1ms resolution. With dual RS-485 as standard feature supporting Modbus RTU, the PMC-512-A can easily be deployed in a stand-alone system with an optional 7" touch-screen HMI that supports up to 32 devices over a RS-485 network, or simultaneously with a centralized monitoring and control system for an AC power distribution network.

Feature Highlights



Multi-Circuit Monitoring

- 12x1-Ø or 4x3-Ø Sub-Meters (SM)
- 4xVirtual Meters (VM) for the arbitrary aggregation of SMs
- 12xDigital Inputs for Trip Status monitoring
- 1xDO for Alarming or Control



Embedded Data Recording

- 4MB Log Memory
- Up to 60 parameters at min. 1-minute recording interval for 5,000 logs with Timestamps
- Non-volatile storage for data redundancy in the event of networking error



Alarming

- 4 Alarm Levels for Voltage & Current
- Frequency, Unbalance, DI, Phase Reversal & Phase Loss Alarms
- Programmable Digital Output Trigger
- Facilitate comprehensive monitoring and alarming for Mains & Branch Circuits

Basic Features



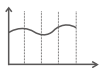
Measurements

- ULN & ULL per Phase and Average, Phase Angle, Ung, Frequency
- 1-Ø SM: Current, Phase Angle, Loading Factor, P, Q, S, PF, kWh, kvarh Import/Export, kVAh
- 3-Ø SM: I Average, P, Q, S, PF Total, kWh, kvarh Import/Export, kVAh Total
- VM: P, Q, S Total, kWh, kvarh Import/Export, kVAh Total



Data Recording

- 4MB Log Memory
- Up to 60 parameters @ min. 1-min recording interval for 5,000 logs with Timestamps
- 24 Monthly Energy Logs
 - 1-Ø SM, 3-Ø SM and VM: kWh, kvarh Import/Export & kVAh
- 1,000 Daily Freeze Logs
 - 1-Ø SM: Current, P, Q, S, kWh, kvarh Import/Export & kVAh
 - 3-Ø SM and VM: P, Q, S Total, kWh, kvarh Import/Export & kVAh



Demand Measurements

- 1-Ø SM: Current, P, Q, S
- 3-Ø SM and VM: P, Q, S Total
- Max. Demands for This Month and Last Month
- Ability to reset any Max. Demands



Power Quality

- THD, TOHD, TEHD
- Individual Harmonics up to 31st
- U and I Unbalance



Inputs & Outputs

- 12xDI, Dry Contact with 24VDC self-excitation
- 1xDO, mechanical relay @ 250VAC/5A or 30VDC/5A



Communications

- 2xRS-485, Modbus RTU protocol
- Baud Rate @ 1,200 to 57,600 bps



SOE

- 512 events time-stamped to ±1ms resolution
- DI/DO changes, Alarms, Setup changes, Self-Diagnosis

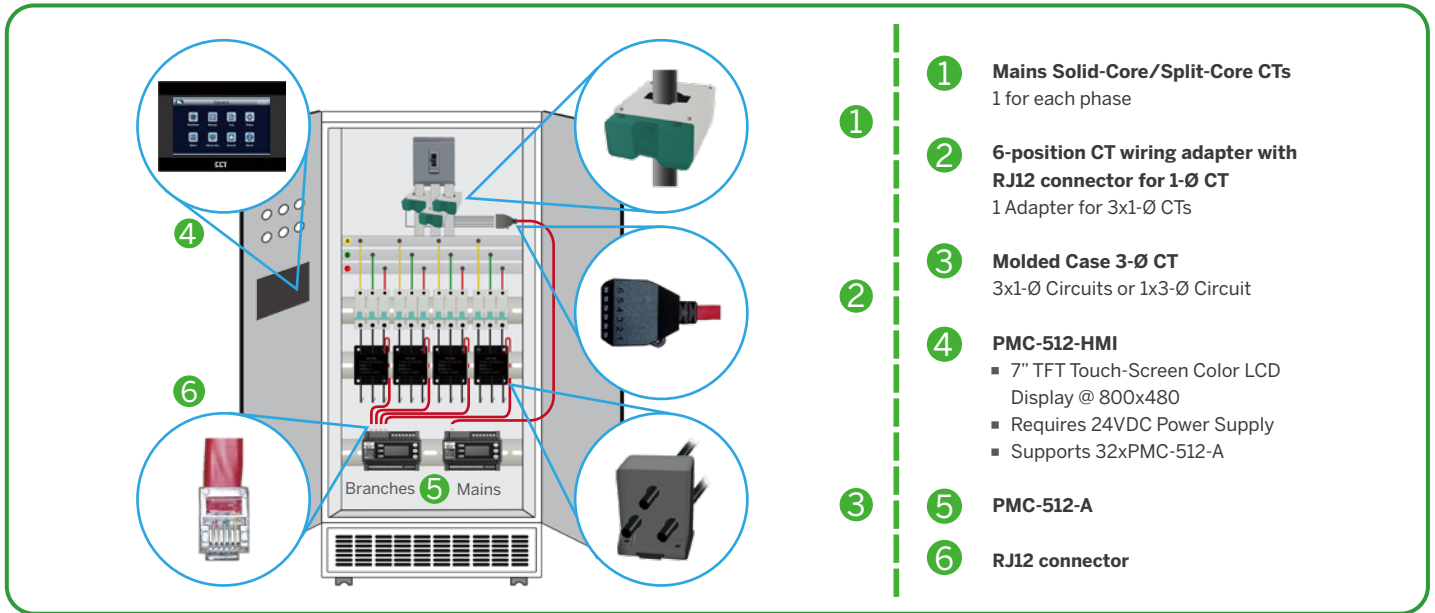


Real-Time Clock

- Battery-backed Real-time Clock with 6ppm accuracy (<0.5s per day)



Overall Setup



Accuracy

| Parameters | Accuracy | Resolution |
|-------------------|----------------------|------------|
| Voltage | ±0.5% | 0.01V |
| Current | ±0.5% | 0.001A |
| Phase Angle | ±1° | 0.1° |
| kW, kvar, kVA | ±1.0% | 0.001kX |
| kWh | IEC62053-21 Class 1 | 0.01kWh |
| kvarh | IEC62053-23 Class 2 | 0.01kvarh |
| PF | ±1.0% | 0.001 |
| Frequency | ±0.02Hz | 0.01Hz |
| THD | IEC61000-4-7 Class B | 0.1% |
| Voltage Unbalance | ±0.2% | 0.01% |
| Current Unbalance | ±1.0% | 0.01% |

Technical Specifications

| Power Supply (L+, N-) | |
|----------------------------|---|
| Standard | 95-250VAC/DC, 47-440Hz |
| Optional | 20-60VDC |
| Burden | 2W |
| AC Voltage & Current | |
| Voltage Input | Un=240ULN/415ULL, Range=10V to 1.2Un |
| Current Input | Solid/Split Core CTs, Range=5A to 1600A |
| Input & Output | |
| Digital Input | 12xDI, Dry Contact with 24VDC self-excitation |
| Digital Output | 1xDO, Normally Open, 250VAC/5A or 30VDC/5A |
| Communications | |
| RS-485 | 2xRS-485, Modbus protocol, 1,200-57,600 bps |
| Environmental Conditions | |
| Operating Temp. | -25°C to 70°C |
| Storage Temp. | -40°C to 85°C |
| Humidity | 5% to 95% (non-condensing) |
| Atmospheric Pressure | 70kPa to 106kPa |
| Altitude | ≤2,000m |
| Mechanical Characteristics | |
| Unit Dimensions | 126x90x65 mm |
| IP Rating | IP50 |

Safety Standards

| Safety Requirements | |
|---|---|
| CE LVD 2014/35/EU | EN61010-1: 2010 EN61010-2-030: 2010 |
| Electrical Safety in Low Voltage Distribution Systems up to 1000Vac and 1500 Vdc | IEC61557-12: 2018 (PMD) |
| Insulation AC Voltage: 2kV @ 1 minute Insulation Resistance: >100MΩ Impulse Voltage: 6kV, 1.2/50µs | IEC62052-11: 2003 IEC62053-21: 2003 EN61010-1: 2010 |

EMC Compatibility

CE EMC Directive 2014/30/EU (EN61326: 2013)

| Immunity Tests | |
|--|---------------------------------------|
| Electrostatic Discharge | EN61000-4-2: 2009 |
| Radiated Fields | EN61000-4-3: 2006 +A1: 2008 +A2: 2010 |
| Fast Transients | EN61000-4-4: 2012 |
| Surges | EN61000-4-5: 2014 +A1: 2017 |
| Conducted Disturbances | EN61000-4-6: 2014 |
| Magnetic Fields | EN61000-4-8: 2010 |
| Oscillatory Waves | EN61000-4-12: 2017 |
| Voltage Dips and Interruptions | EN61000-4-11: 2004 +A1: 2017 |
| Emission Tests | |
| Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment | EN55011: 2016 |
| Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment | EN55032: 2015 |
| Limits for Harmonic Current Emissions for Equipment with Rated Current ≤16A | EN61000-3-2: 2014 |
| Limitation of Voltage Fluctuations and Flicker in Low-Voltage Supply Systems for Equipment with Rated Current ≤16A | EN61000-3-3: 2013 |
| Emission Standard for Industrial Environments | EN61000-6-4: 2007 +A1: 2011 |



Ordering Information

| Product Code | | Description |
|--|-----------------|---|
| PMC-512 AC Multi-Circuit Power Monitor | | AC Multi-Circuit Power Monitor with 3-Ø Voltage & 12xCurrent Inputs for 12x1-Ø or 4x3-Ø Sub-Meters, 4 Virtual Meters, Data Recorder with 4MB memory, 12xDI, 1xDI and 2xRS-485 |
| Basic Function | A | |
| Display Screen | L | LCD |
| Input Current | A | External CT with 50A-1600A Primary and 40mA Secondary |
| | B | External CT with 5A Primary and 1.667mA Secondary |
| Input Voltage | 3 | 240VAC (3x240ULN/415ULL) |
| Power Supply | 2 | 95-250VAC/VDC, 47-440Hz |
| | 3 | 20-60VDC |
| Frequency | 5 | 45-65Hz |
| DI | C | 12xDI, Dry Contact with 24VDC self-excitation |
| Language | E | English |
| PMC-512 | A L A 3 2 5 C E | PMC-512-ALA325CE (Standard Model) |

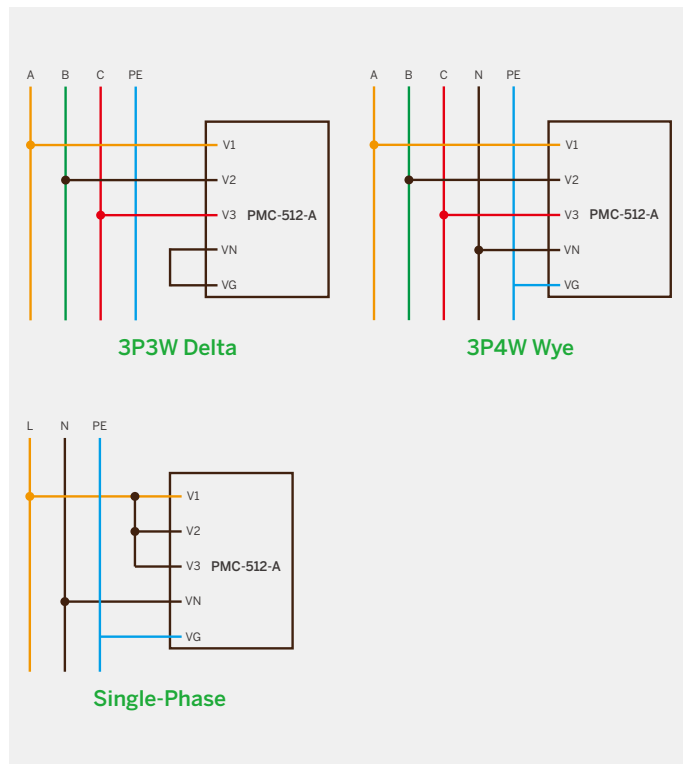
- 1) The CTs and cables are not included, please refer to PMC-512-A Accessories for CT options.
- 2) Please refer to HMI ordering information for HMI options.

HMI Ordering Information

| Product Code | | Description |
|------------------------|-------|---|
| PMC-512-HMI | | |
| Basic Function | A | 7" TFT Touch Screen LCD @ 800x480 and 24VDC ± 20% Power Supply, supporting up to 32xPMC-512-A |
| Switching Power Supply | 2 | HDR-15-24 Switching Power Supply (Input: 85-264VAC/DC, Output: 24VDC) |
| | 4 | PMC-DP-48V/24V Switching Power Supply (Input: 48VDC, Output: 24VDC) |
| Language | E | English (Supports both English and Traditional Chinese) |
| PMC-512-HMI | A 2 E | PMC-512-HMI-A2E (Standard Model) |

- 1) The cables for connecting the HMI to the Switching Power Supply are not included.
- 2) The HMI and PMC-512 are using high-speed communication. It is recommended to use shielded twisted-pair cable with diameter from 0.5 to 1.0 mm².

Wiring



Accessories

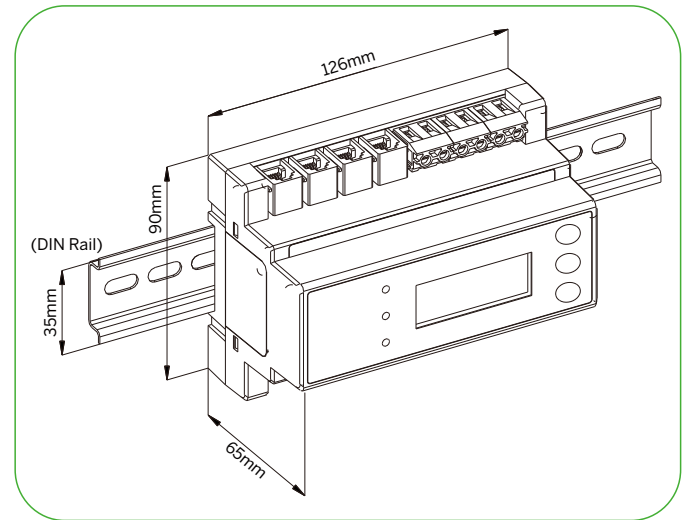
| Branch CTs | | Part Number | Ø | Accuracy | Aperture (mm) |
|---------------|--|--------------------------|-----|----------|---------------|
| Split-Core CT | | PMC-SCCT-5A-1.667mA-10-A | 1-Ø | 1.0 | Ø10 |
| | | PMC-SCCT-100A-40mA-16-A | 1-Ø | 0.5 | Ø16 |
| | | PMC-SCCT-200A-40mA-24-A | 1-Ø | 0.5 | Ø24 |
| | | PMC-SCCT-400A-40mA-35-A | 1-Ø | 0.5 | Ø35 |
| | | PMC-SCCT-800A-40mA-A | 1-Ø | 0.5 | 50x80 |
| Solid-Core CT | | PMC-CT-100A-40mA-12-A | 1-Ø | 0.2 | Ø12 |
| | | PMC-CT-250A-40mA-A | 1-Ø | 0.2 | 31x24 |
| | | PMC-CT-400A-40mA-A | 1-Ø | 0.2 | 31x24 |
| | | PMC-CT-800A-40mA-A | 1-Ø | 0.2 | 103x33 |
| | | PMC-CT-50A-40mA-3P-A | 3-Ø | 0.1 | 3xØ10 |
| | | PMC-CT-100A-40mA-3P-A | 3-Ø | 0.1 | 3xØ10 |
| | | PMC-CT-250A-40mA-3P-A | 3-Ø | 0.2 | 3xØ20 |
| | | PMC-CT-630A-40mA-3P-A | 3-Ø | 0.2 | 3xØ40 |

CT Adapter

| Part Number | Description |
|-------------|---|
| PMC-BCC-3CT | 3 single-phase CTs can be connected through one Adapter |

- 1) The PMC-BCC-3CT Adapter must be equipped when using single-phase CTs.
- 2) For CT without CT cable, the recommended CT cable diameter is 0.5 - 1.0 mm².

Dimensions



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Your Local Representative

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