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

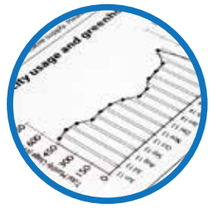
PMC-512-A is CET's latest offer for the economical multi-circuit monitoring of Data Centers, Telecom Base Stations, Industrial & Commercial Buildings. Housed in a compact DIN Rail Mount enclosure, the PMC-512-A is perfectly suited for high-density metering applications. The PMC-512-A features quality construction with multifunction and high-accuracy measurements with an optional color touch-screen HMI that supports up to 16 devices simultaneously over a RS-485 network. The PMC-512-A comes standard with 12xDIs for status monitoring, 1xDO for control or alarming as well as 1xAI for temperature measurement or other analogue input applications. 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 its Touch Screen HMI or simultaneously with a centralized monitoring and control system for an AC power distribution network.

- Class 0.5S Accuracy for Energy Measurements
- Built-in LCD display
- Optional support for 7" Touch-Screen HMI
- Compact, DIN Rail Mount for easy installation

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
- 1xAI (0-20mA)



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 and AI Frequency, Unbalance, DI, Phase Reversal & Phase Loss Alarms
- Programmable Digital Output Trigger
- Facilitate comprehensive monitoring and alarming for Mains & Branch Circuits

Basic Features

Measurements

- Class 0.5S Accuracy for Energy measurements
- 1-Ø SM: Voltage, Current, Phase Angle, Frequency, Loading Factor, kW, kvar, kVA, PF, kWh, kvarh Import/Export, KVAh
- 3-Ø SM: VLN & VLL per phase and average, I per Phase and average, Unbalance, Phase Angles, Frequency, kW, kvar, kVA, PF per phase and total, kWh, kvarh Import/Export, KVAh Total
- VM: kW, kvar, kVA Total, kWh, kvarh Import/Export, KVAh Total

Inputs & Outputs

- 12xDI with external excitation @ 110V/220V AC/DC
- 1xDO, mechanical relay @ 250VAC/5A or 30VDC/5A
- 1xAI, 0-20mA

Demand Measurements

- 1-Ø SM: Current, kW, kvar, kVA
- 3-Ø SM and VM: kW, kvar, kVA Total
- Max. Demands for This Month and Last Month
- Ability to reset any Max. Demands

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, kW, kvar, kVA, kWh, kvarh Import/Export & kVAh
  - 3-Ø SM and VM: kW, kvar, kVA Total, kWh, kvarh Import/Export & kVAh

SOE

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

Power Quality

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

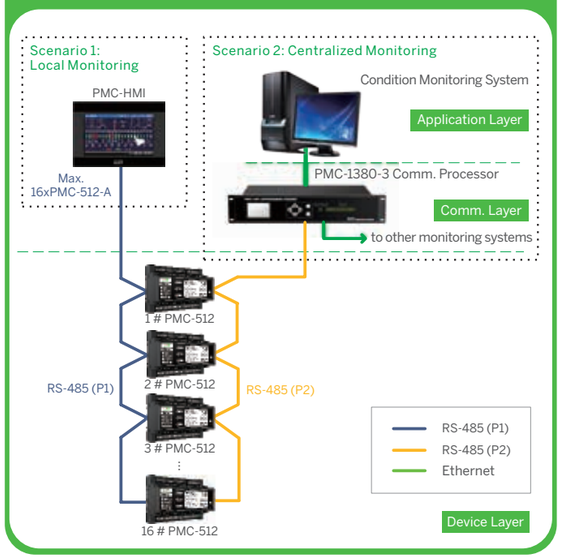
Communications

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

Communication and Networking

Typical Applications

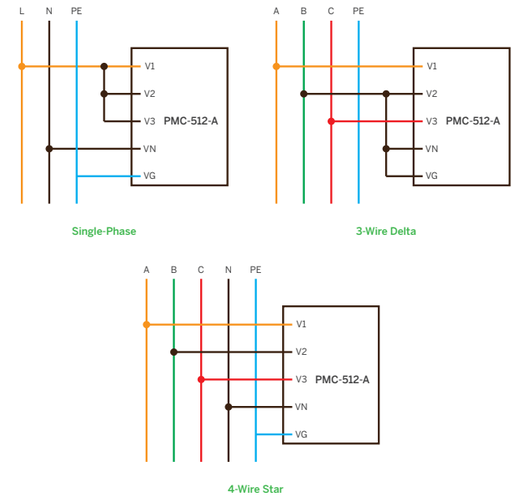
Two RS-485 ports @ max. 57,600 bps with Modbus RTU



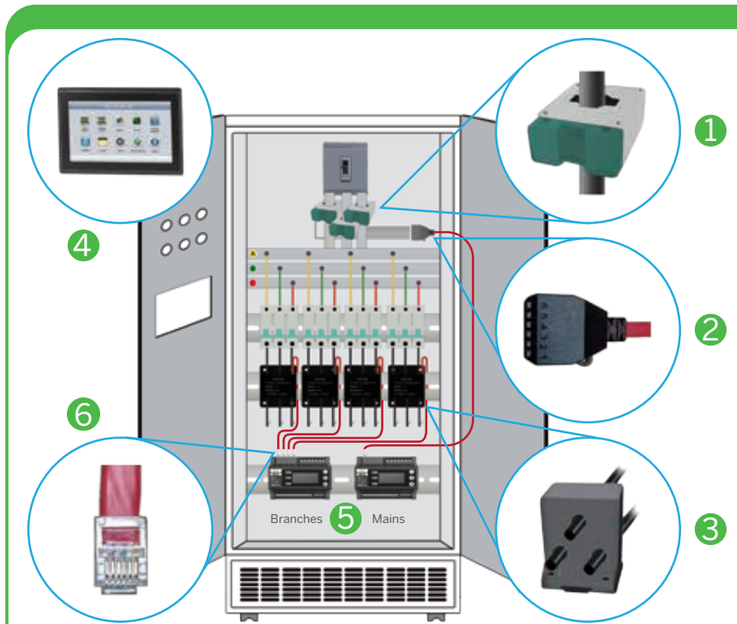
Wiring

Wiring of PMC-512-A

Single-Phase, 3-Wire Delta, 4-Wire Star



Overall Setup



1. **Mains Solid-Core/Split-Core CTs**
   1 for each phase
2. **6-position CT wiring adapter with RJ12 connector**
   1 for 3 CTs
3. **Molded Case 3-Ø CT (Max. 100A)**
   3x1-Ø Circuits or 1x3-Ø Circuit
4. **PMC-HMI**
   - 7" TFT Touch-Screen Color LCD Display @ 800x480
   - Requires 24VDC Power Supply
   - Supports 16xPMC-512-A
5. **PMC-512-A**
6. **RJ12 connector**

Technical Specifications

Power Supply

48VDC Power Supply	20-60VDC±10%, <2W
240V Power Supply	85-264VAC 47-440Hz, 88-370VDC, <2W

AC Voltage & Current

Voltage Input		Un=240VLN/415VLL, Range=10-520V
Current Input (In=40mA, Range: 0.5%-120%)	Solid Core	100A Molded Case CT (3-phase)
		250A Solid Core CT (1-phase)
		400A Solid Core CT (1-phase)
	Split Core	100A SCCT (1-phase)
		200A SCCT (1-phase)
		400A SCCT (1-phase)
		800A SCCT (1-phase)

Accuracy

Voltage / Current	±0.2%
kW / kvar / kVA	±0.5%
kWh, kVAh	0.5S
kvarh	Class 2
P.F.	±1.0%
Frequency	±0.02Hz

Input & Output

Digital Input	12xDI, 110V/220V AC/DC External Excitation
Digital Output	1xDO, Normally Open, 250VAC/5A or 30VDC/5A
Analog Input	1xAI, 4-20mA

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 98% (non-condensing)
Atmospheric Pressure	70kPa to 106kPa
Altitude	⩽4,000m

Mechanical Tests

Vibration Test	Response	IEC 60255-21-1: 1988 Level I
	Endurance	IEC 60255-21-1: 1988 Level I
Shock Test	Response	IEC 60255-21-2: 1988 Level I
	Endurance	IEC 60255-21-2: 1988 Level I
Bump Test		IEC 60255-21-2: 1988 Level I

Safety Standards

Safety Requirements

CE LVD 2014 / 35 / EU		EN 61010-1: 2010, EN 61010-2-030: 2010
Electrical safety in low voltage distribution systems up to 1,000VAC and 1,500VDC		IEC 61557-12: 2008
Insulation	Dielectric test: 2kV @ 1 minute Insulation resistance: >100MΩ Impulse voltage: 6kV, 1.2/50μs	IEC 60255-5: 2000

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EMC Compatibility

CE EMC Directive 2014/30/EU (EN 61326: 2013)

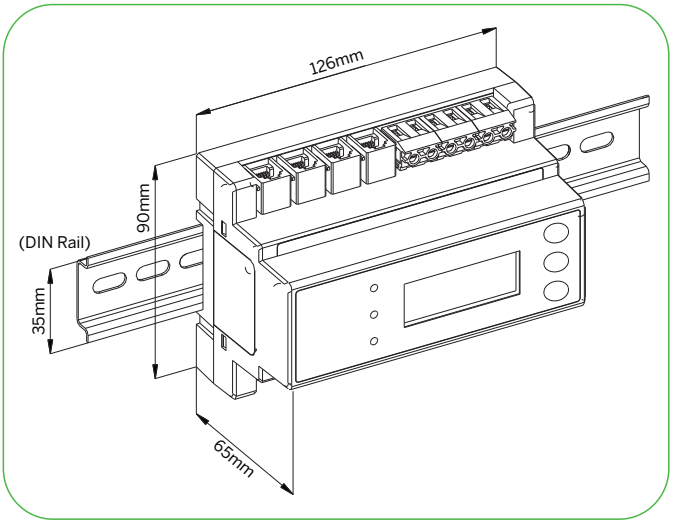
Immunity Tests

Electrostatic Discharge	EN 61000-4-2: 2009
Radiated Fields	EN 61000-4-3: 2006+A1: 2008+A2: 2010
Fast Transients	EN 61000-4-4: 2012
Surges	EN 61000-4-5: 2006
Conducted Disturbances	EN 61000-4-6: 2009
Magnetic Fields	EN 61000-4-8: 2010
Oscillatory Waves	EN 61000-4-12: 2006

Emission Tests

Limits and methods of measurement of electromagnetic disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment	EN 55011: 2009+A1: 2010 (CISPR 11)
Limits and methods of measurement of radio disturbance characteristics of information technology equipment	EN 55022: 2010+AC: 2011 (CISPR 22)
Limits for harmonic current emissions for equipment with rated current ⩽16 A	EN 61000-3-2: 2014
Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ⩽16 A	EN 61000-3-3: 2013
Emission standard for industrial environments	EN 61000-6-4: 2007+A1: 2011
Testing and measurement techniques - Ring wave immunity test	EN 61000-4-12: 2006

Dimensions



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