PMC-512-D

DC Multi-Circuit Power Monitor

- Data Center DC Power Monitoring
- Photovoltaic DC Distribution Boards
- Telecom Base Station DC PDUs
- Other DC Power Distribution Units

Product Introduction

PMC-512-D is CET's latest offer for Telecom Base Station, Renewable Energy, Commercial Building and Industrial Automation applications that require Direct Current (DC) multi-circuit monitoring. Housed in compact metal enclosure, the PMC-512-D is perfectly suited for applications that have high density metering requirements. The PMC-512-D features quality construction with multifunction and high-accuracy measurements, one Mains Input, up to 12 Branch Circuit Inputs and an optional color touch-screen HMI. The PMC-512-D comes standard with 13 Digital Inputs for status monitoring, one Relay Output for control or alarming as well as one Analogue Input 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-D can easily be deployed in a stand-alone system with its Touch Screen HMI or simultaneously with a centralized monitoring and control system, such as PecStar® iEMS Integrated Energy Management System, for a DC power distribution network.

- Class 0.5 for Energy Measurements
- Demand, SOE and Setpoint features
- Two RS-485 @ max. 57,600 bps
- Compact, DIN Rail Mount for easy installation

Feature Highlights

Multi-Circuit DC Monitoring

- One Mains Circuit
- 12 Branch Circuits
- Voltage, Current, Power, Energy and Load Factor
- 13 Digital Inputs

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 Current and AI
- 2 Alarm Levels for Voltage and Residual Current
- Status Input Alarm
- Programmable Digital Output Trigger
- Facilitate comprehensive monitoring and alarming for Mains & Branch Circuits

Basic Features

Measurements

- Multifunction measurements, including Voltage, Current, Power, Demand, Load Factor, optional AI & Residual Current
- Class 0.5 Energy measurement for 1 Mains and 12 Branch Circuits

Inputs & Outputs

- 13xDI, external excitation @ 48VDC or 240VDC
- 1xDO, mechanical relay output @ 250VAC/5A or 30VDC/5A
- 1xAI, 0-20mA

SOE

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

Data Recording

- 4MB Log memory
- Up to 60 parameters @ min. 1-min recording interval for 5,000 logs with timestamps
- 24 Monthly Energy Logs – kWh for Mains and each Branch Circuit

Demand Measurements

- Current and kW Demands for Mains and each Branch Circuit
- Max. Demands for This Month and Last Month
- Ability to reset any Max. Demands

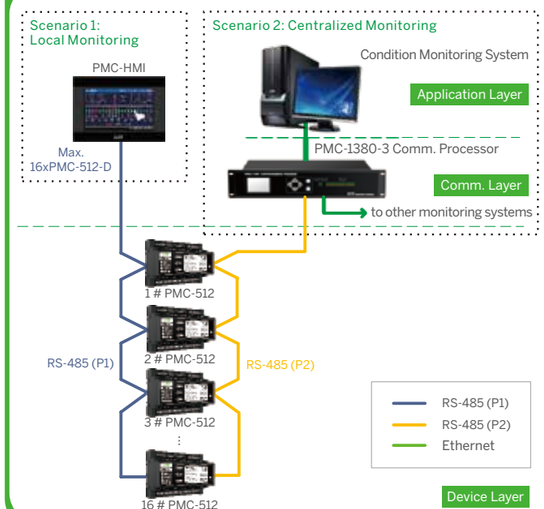
Communications

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

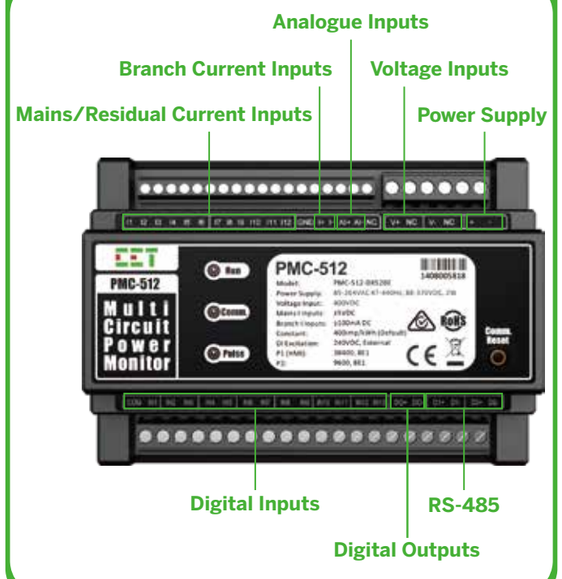
Communication and Networking

Typical Applications

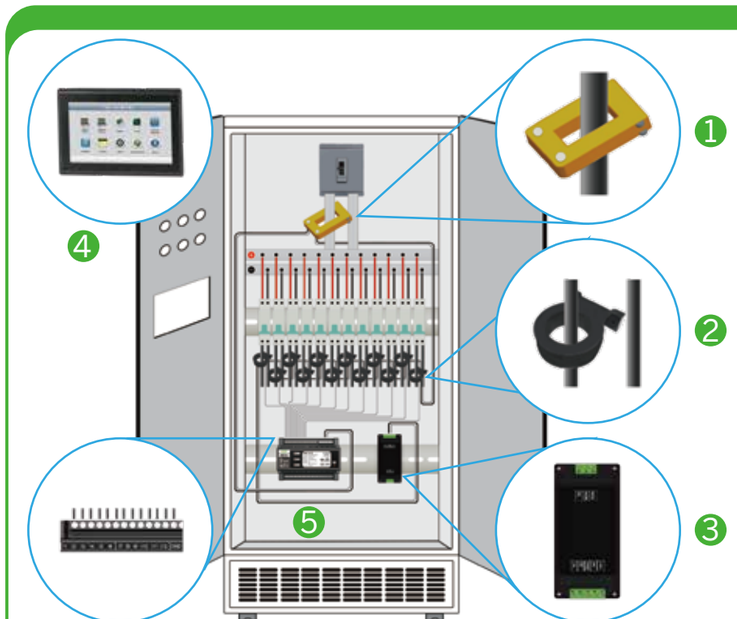
Two RS-485 ports @ max. 57,600 bps with Modbus RTU



PMC-512-D Terminals



Overall Setup



1. **Hall Effect CTs (or Residual CT) for Mains Circuit**
   - Mains CT Current ratings: 200A, 400A, 600A, 800A, 1000A, 1200A
   - Mains Residual Current rating: 360mA
2. **Hall Effect CTs for Branch Circuit**
   - Current ratings: 50A/100A/200A
3. **External Power Supply**
   - ±12VDC for Hall Effect CTs
   - 24VDC for optional HMI
4. **PMC-HMI**
   - 7" TFT Touch-Screen Color LCD Display @ 800x480
   - Requires 24VDC Power Supply
   - Supports 16xPMC-512-D
5. **PMC-512-D**

Technical Specifications

Power Supply

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

Voltage & Current

Voltage Input	-48VDC	Un=60VDC, Range: 0.05xUn-1.2xUn
	240VDC	Un=400VDC, Range: 0.05xUn-1.2xUn
	Burden	<0.05VA/phase @ 240VDC
	Overload	1.2xUn continuous, 2xUn for 10s
Current Input	Mains Hall Effect CT	Nominal Output = ±4VDC @ In Where In = 200A-1200A
	Residual Hall Effect CT	Nominal Output = ±5VDC @300mA, 0-100kΩ Range: 0.5% to 120% In Overrange: 1.2xIn continuous, 2xIn for 10s
	Branch Hall Effect CT	Output = ±25mA @50A, ±50mA @100A and ±100 mA @200A Range: 0.5% to 120% In Overrange: 1.2xIn continuous, 2xIn for 10s

Accuracy

Voltage / Current	±0.2%
Power	±0.5%
Energy	Class 0.5 (Main Unit only), Class 1.0 (inclusive of Hall Effect CT)
Residual Current	±1.0%
Analog Input	±0.5%

Input & Output

Digital Input	13xDI, 48V/240VDC External Excitation
Digital Output	1xDO, Normally Open, 250VAC/5A or 30VDC/5A
Analog Input	1xAI, 0-20mA
Energy Pulse Output	1xLED Energy Pulse Output

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	⩽3,000m

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)

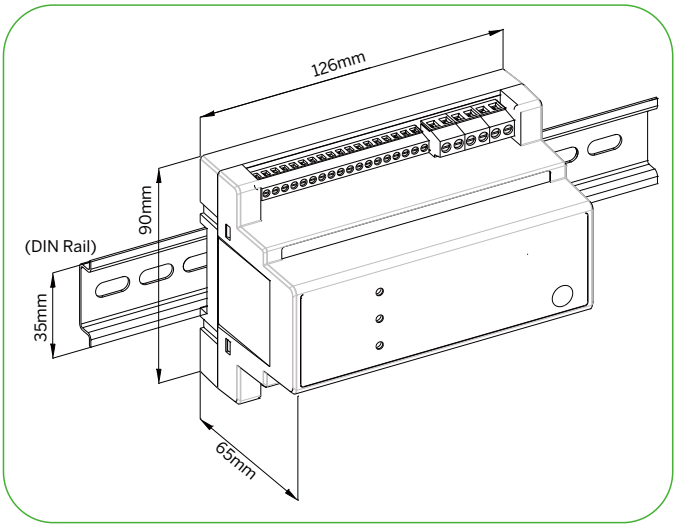
Immunity Tests

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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