



# PMC-512-J

## DC Multi-Circuit Insulation Monitor

 Data Center DC Distribution Boards

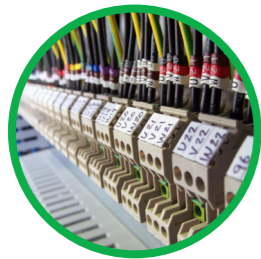
 Renewal Energy Applications

## Product Introduction

**PMC-512-J** DC Multi-Circuit Insulation Monitor is CET's latest offer for a compact, multi-circuit insulation monitor for Data Center PDU and Renewable Energy applications. The PMC-512-J features quality construction, High-accuracy Residual Current measurements and Insulation Resistance calculation, Alarming and Data Logging with an optional color touch-screen HMI. The PMC-512-J comes standard with 2xDigital Inputs for status monitoring, 2xRelay Outputs for control or alarming as well as 1xAnalogue Input for auxiliary measurements. The standard SOE Log records all setup changes, alarms and DI/DO operations in 1ms resolution. With dual RS-485 and Modbus RTU support, the PMC-512-J can easily be deployed in a stand-alone system with its optional Touch-Screen HMI or simultaneously with a centralized condition monitoring system such as CET's PecStar® iEMS.

- 21 channels of Residual Current measurements with calculated Insulation Resistance
- 4MB Log memory, up to 48 parameters for 5,000 logs with timestamps
- 512 events time-stamped to  $\pm 1$ ms resolution

## Feature Highlights



Multi-Circuit Monitoring



Embedded Data Recording



Alarming

- 21 Residual Current measurements with calculated Insulation Resistance
- 4MB Log memory
- 2 Alarm Levels for Mains Voltage, Residual Current and Insulation Resistance
- 4 Alarm Levels for AI measurement
- DI On/Off Alarm
- Trigger Digital Output & LED Alarm Indicator
- Non-volatile storage for data redundancy in the event of networking error

## Basic Features

- Measurements**
- Mains Voltage: V+ & V- to Ground DC Voltage  
V+ & V- to Ground AC Injection Voltage
  - Voltage measurement: 0.2%
  - Residual Current measurement: 1%
  - Insulation Resistance (calculated):  
Mains Circuit: 10 to 60k $\Omega$  @  $\pm 5\%$ ;  
60 to 200k $\Omega$  @  $\pm 10\%$ ;  
Branch Circuits: 10 to 50k $\Omega$  @  $\pm 15\%$ ;  
50 to 100k $\Omega$  @  $\pm 25\%$

- Inputs & Outputs**
- 2xDI, self excitation @ 24VDC
  - 2xDO, mechanical relay output
  - 1xAI, 0-20mA
  - LED Alarm Indicator

- Data Recording**
- 4MB Log memory, up to 48 parameters for 5,000 logs with timestamps

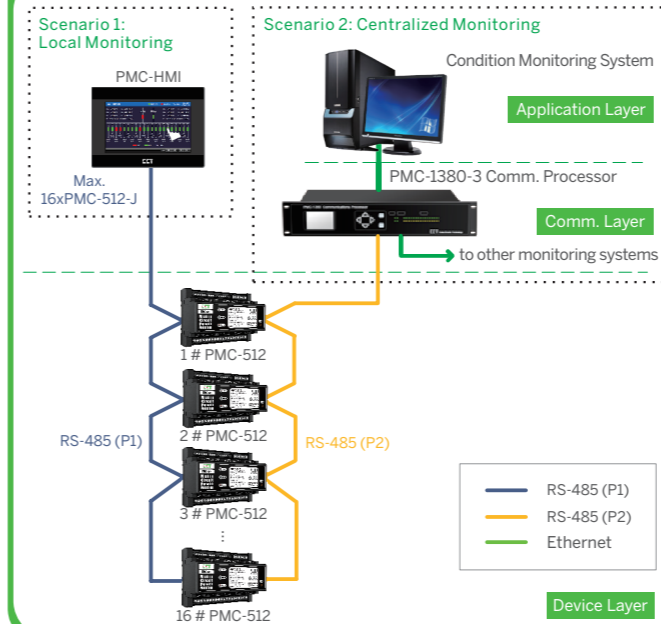
- SOE**
- 512 events time-stamped to  $\pm 1$ ms resolution
  - DI/DO changes, Alarms, Setup changes, Self-Diagnosis

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

## Communication and Networking

### Typical Applications

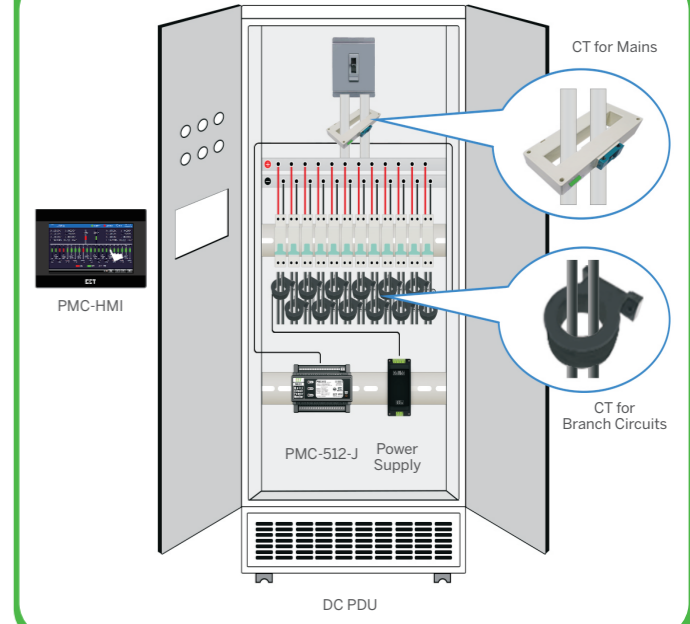
Two RS-485 ports @ max. 57,600 bps with Modbus RTU



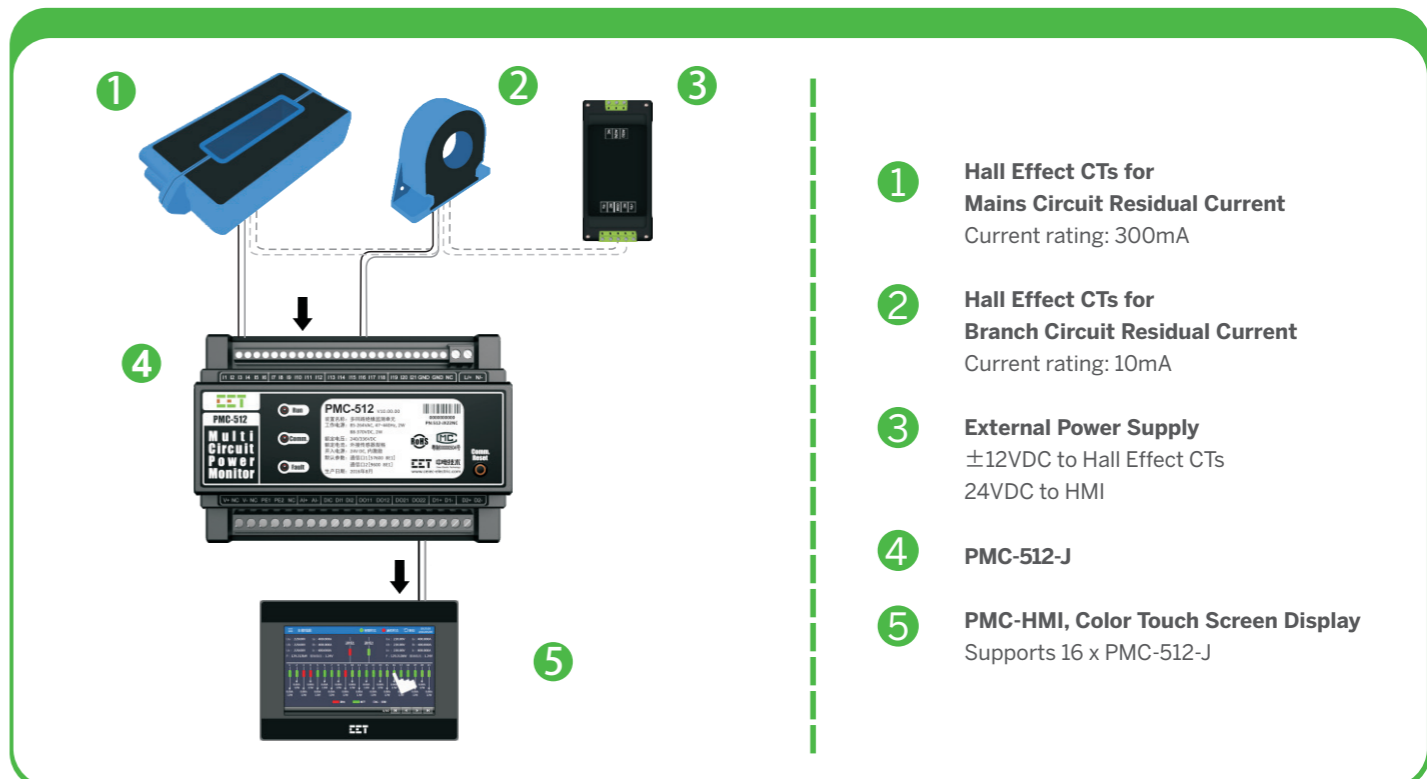
## DC Power Distribution Unit

### Installation of PMC-512-J

Touch-Screen HMI and Hall Effect CTs



## Overall Setup



# Technical Specifications

## Power Supply

48VDC Power Supply	20-60VDC
240VDC Power Supply	88-370VDC, <2W

## Voltage & Current

Voltage Input	240VDC	Range: 0-400VDC, 0.05xUn-Umax
	Burden	<0.05VA/circuit @ 240VDC
	Overload	1.2xUn continuous, 2xUn for 30s
Residual Current Input	Branch Circuits	21
	Hall Effect CT	300mA (Mains), 10mA (Branch Circuits) Range: 0.01-1.2In ±5VDC Output
	Burden	<0.1W
	Overload	1.2xIn continuous, 2xIn for 10s

## Accuracy

Voltage	±0.2%	
Residual Current	±1.0%	
Insulation Resistance	Mains Circuit	10-60kΩ: ±5%, 60-200kΩ: ±10%
	Branch Circuits	10-50kΩ: ±15%, 50-100kΩ: ±25%
Analog Input	±0.5%	

## Input & Output

Digital Input	2xDI, 24VDC Self Excitation
Digital Output	2xDO, Normally Open, (250VAC/5A or 30VDC/5A)
Analog Input	1xAI, 0-20mA

## Communications

RS-485	2xRS-485, Modbus protocol, 1,200-57,600 bit/s
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## 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

## EMC Compatibility

Electrostatic Discharge	IEC 61000-4-2: 2001 Level IV
Radiated Fields	IEC 61000-4-3: 2002 Level III
Fast Transients	IEC 61000-4-4: 2004 Level IV
Surges	IEC 61000-4-5: 2005 Level IV
Conducted Disturbances	IEC 61000-4-6: 2006 Level III
Oscillatory Waves	IEC 61000-4-12: 2006 Level III
Magnetic Fields	IEC 61000-4-8: 2001 Level IV
Radio Disturbances	CISPR 22: 2006 Level B

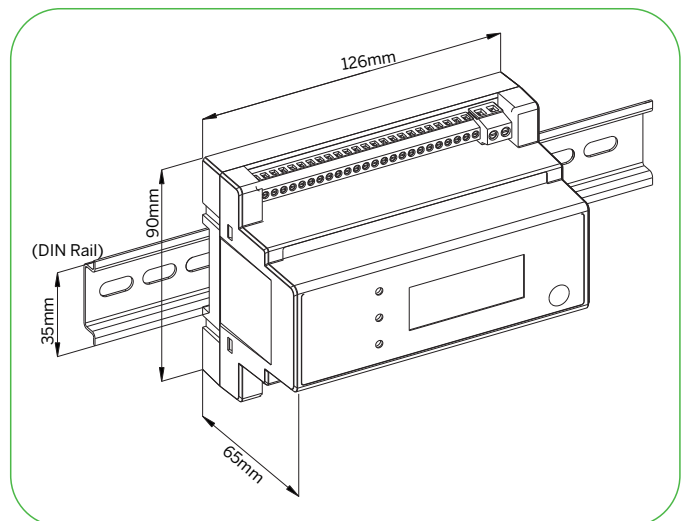
## Insulation Requirements

Impulse Voltage	6kV, 1.2/50μs (IEC 60255-5: 2000)
Dielectric Test	2kV @ 1min (IEC 60255-5: 2000)
Insulation Resistance	>100MΩ

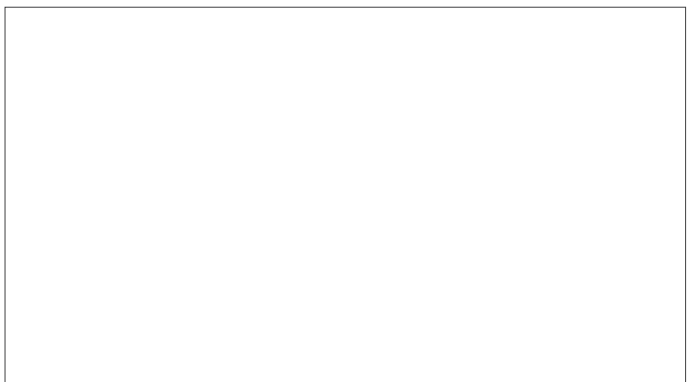
## Mechanical Tests

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

## Dimensions



Your Local Representative



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