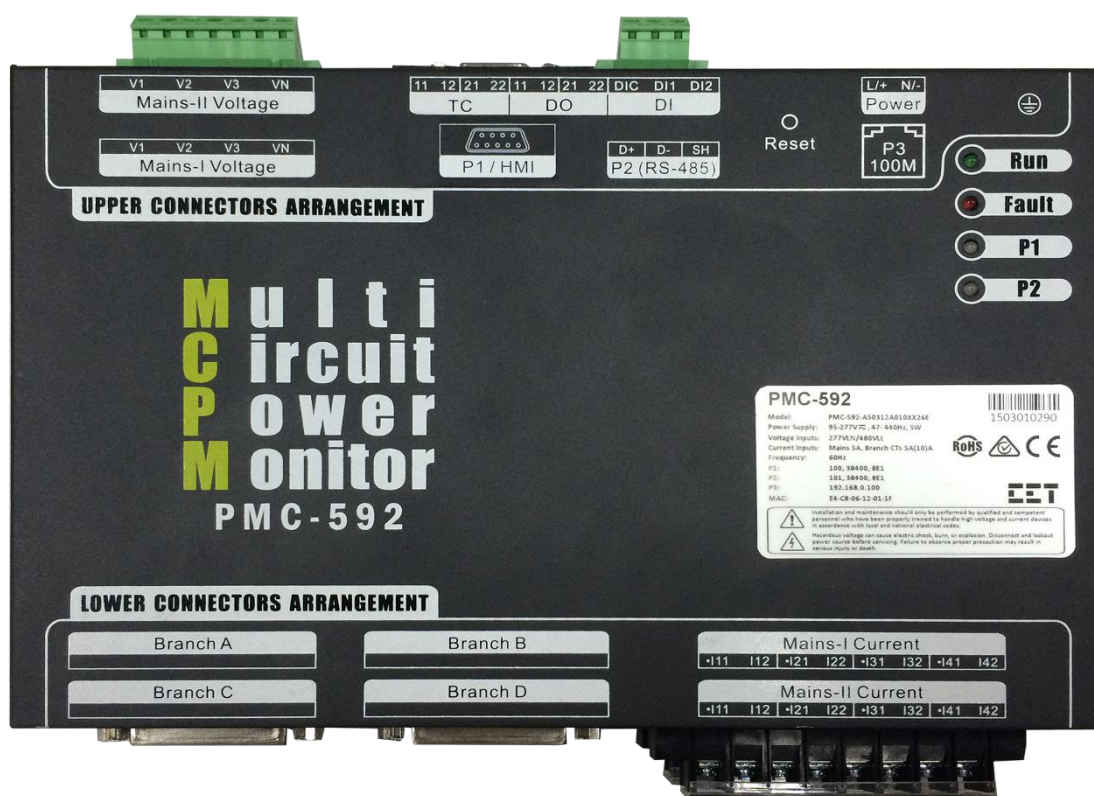


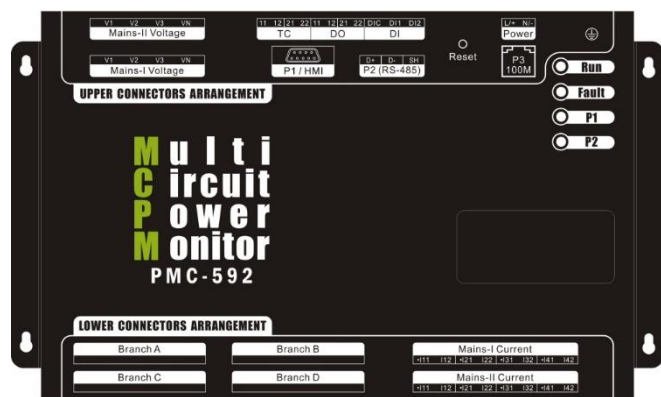


The Ultimate Solution for PDU/LVDB/Load Center Monitoring Applications

- IEC 62053-22 Class 0.5S (Mains)
- IEC 62053-21 Class 1 (Branch)
- 2xMains Inputs each with 3xV & 4xI
- 21, 42, 63 or 84 Branch Circuits
- Support Solid-Core and Split-Core CT
- Possible In-Service Branch Expansion
- Mixing of 1-Ø, 2-Ø and 3-Ø Feeders
- 10 Virtual Meters (Aggregation)
- Dips/Swells Detection with WFR
- 1GB Non-Volatile Log Memory
- Data, Energy & Event Recording
- Harmonics on Mains and all Branches
- Max. Demands and Max./Min.
- 4-Level Alarming – HH, H, L and LL
- 2xDI, 2xDO and 2xTemp. Inputs
- Battery-backed Real-Time Clock
- Ethernet, RS-422/232/485
- Embedded Web Server
- Multi-Protocol Support
- User Friendly 7" Color Touch Panel
- Industrial Grade Components
- Tropicalization & Extended Temp. Range

Designed For Reliability

Manufactured To Last



PMC-592 Main Unit

The PMC-592 MCPM is the ultimate solution for PDU, LVDB and Load Center applications that require multi-circuit monitoring. Housed in a compact metal enclosure, the PMC-592 is perfectly suited for applications that require high density metering. The PMC-592 features quality construction with multifunction and High-Accuracy measurements, two Mains Inputs, up to 84 Branch Circuit Inputs and an optional 7" Touch-Screen HMI. The PMC-592 comes standard with two Digital Inputs for status monitoring, two Digital Outputs for control or alarming as well as two RTD Inputs for temperature measurements. The standard SOE Log records all setup changes, Setpoint alarms and DI/DO operations in 1ms resolution. With Ethernet and dual RS-485 as standard feature supporting Modbus RTU/TCP, HTTP, SMTP as well as SNMP, the PMC-592 becomes a vital component of an intelligent, multi-circuit monitoring solution.

Typical Applications

- Data Center PDUs
- Clean room LVDB (Low-Voltage Distribution Board)
- Load Center Monitoring
- Ring Main Unit Metering
- Motor Control Center metering
- Commercial & Residential LV High-Density Multi-Circuit monitoring

Features Summary

Ease of use

- Status LEDs - Run, Fault, and Comm. activities
- Self-diagnostic function
- Password protected setup via its built-in Web Interface or optional HMI Display

Dual Mains Inputs

- 3-phase Voltage Inputs for 120ULN/208ULL, 220-240ULN/380-415ULL and 277ULN/480ULL systems
- 4-phase Current Inputs for 5A or 1A CT

Branch CT Inputs

- 100A Solid-Core CT Strip for new PDU installations
- 5A Solid-Core CT Strip for interfacing with external CTs with 5A secondary for LVDB/Load Center applications
- Supported CT Strips include 21x100A, 21x5A, 12x100A or 12x5A
- 100A, 200A, 400A, 800A and 1600A Branch Split-Core CTs

Flexible Configuration

- Programmable CT Ratio and Polarity, Sub-Meter (SM) reference voltage, configurable 2- ϕ & 3- ϕ SM Grouping, CT Strip Orientation (Sequential or Crossover) and CT Strip Direction (Normal or Reverse)
- Support Single, Dual and Custom Panel Modes arrangement
- Programmable labels for Device, Panel, 1- ϕ SMs and VMs

Mains Measurements

- True RMS measurements
- 2 Mains, each supporting 3 Voltage and 4 Current Inputs
- ULN and ULL per Phase and Average, Frequency
- I per Phase and Average, measured Neutral Current
- kW, kvar, kVA, PF per Phase and Total
- Loading Factor per Phase and Average
- kWh/kvarh Import/Export, kVAh Total
- Dual Tariff energy accumulation

Branch Circuits Measurements

- 21, 42, 63 or 84 Branch Current Inputs
- I, kW, kvar, kVA, PF, Loading Factor, kWh, kvarh, kVAh and Maximum Demand with Timestamp

Demand Measurements

- Mains - I per Phase, kW Total, kvar Total, kVA Total
- Branch - I, kW, kvar, kVA per Circuit and kW Total, kvar Total and kVA Total per 2- ϕ or 3- ϕ SM
- Max. Demands with timestamp for This Month and Last Month (or Since Last Reset and Before Last Reset)

Sub-Meters (SM)

- Support configurable 1- ϕ , 2- ϕ and 3- ϕ SM
- I Average, Loading Factor, kW, kvar, kVA, PF Total, kWh/kvarh Import and kVAh Total
- Demand Values for I Average, kW, kvar and kVA
- Max. Demands with Timestamp for This Month and Last Month (or Since Last Reset and Before Last Reset)

Virtual Meters (VM)

- 10 configurable Virtual Meters for arbitrary aggregation of energy consumption from Mains and any of the (84) 1- ϕ SMs.
- Support both Addition and Subtraction.
- kW, kWh/kvarh Import and kVAh per VM
- Dual-Tariff energy accumulation

Power Quality

- Mains Inputs
 - U and I Unbalance based on Sequence Components
 - U and I THD, TOHD, TEHD and Individual harmonics to 31st
 - Current TDD, K-Factor and Crest Factor
 - Dips/Swells and Interruptions detection with Waveform Recording
- Branch Inputs
 - Current THD for each 1- ϕ SM

Alarms

- Powerful alarming functions for Mains, Branches, RTDs and DIs
- Support High-High, High, Low, and Low-Low Alarms
- Support Phase Loss and Phase Reversal Alarms
- Configurable Threshold and Time Delay
- Support Global Alarm and Mains-I/II Total Summary Alarm Status
- All alarms are recorded in the SOE Log

Max./Min. Recorder

- Mains - U, I, Frequency, kW, kvar, kVA, Loading Factor, PF, Unbalance, THD, TOHD, TEHD
- RTD1 and RTD2
- 1- ϕ SMs - I, kW, kvar, kVA, PF, Loading Factor and I THD
- 2- ϕ and 3- ϕ SMs - I, kW, kvar, kVA, PF and Loading Factor
- Max./Min. Timestamp for This Month and Last Month (or Since Last Reset and Before Last Reset)

Interval Energy Recorder

- Complete energy profiling of Mains-I/II, 1- ϕ , 2- ϕ and 3- ϕ SMs, VMs as well as the Mains-I/II and VMs for Tariffs T1 and T2.
- Programmable Interval at 5, 10, 15, 30 or 60-minute intervals
- Fixed Log Depth at 10,000 entries, capable of recording:
 - 1 month @ 5-min interval
 - 2 months @ 10-min interval
 - 3 months @ 15-min interval
 - 6 months @ 30-min interval
 - 1 year @ 60-min interval

Waveform Recorder (WFR)

- Support up to 16 WFR Log entries
- Record U1-U3 and I1-I3 for both Mains-I and Mains-II
- Programmable resolution (samples/cycle x # of cycles) at 64x150, 64x75, 32x300, 32x150, 16x600 and 16x300
- Triggered by Dips/Swells and Interruptions

Data Recorders

- 1GB On-board log memory
- 10 Data Recorders of 64 parameters each for a total of 640 Real-time parameters
- Programmable Log Depth (65535 max.) and Recording Interval (60-345600s)

SOE Log

- 1000 events time-stamped to $\pm 1\text{ms}$ resolution
- Setup changes, Power-On/Off, Alarms, Diagnostics and I/O operations

Digital Inputs

- 2 Channels, volt free dry contact, 24VDC internally wetted
- External status monitoring with programmable debounce
- 1000Hz sampling
- Tariff Switching based on DI Status for Main and GenSet accumulation

Digital Outputs

- 2 Channels for external control and alarm - 5A@250VAC/30VDC

RTD Input

- 2 Channels PT100 (sensor not included)

Real-Time clock

- 6ppm battery-backed Real-Time Clock (<0.5s per day)

System Integration

- Supported by CET's PecStar® iEMS and iEEM
- Easy integration into other Automation, Energy Management, BMS or SCADA systems via Modbus RTU/TCP and SNMP

Communications

P1/HMI – DB9 Connector

- Modbus RTU
- Compatible with RS-232/422/485
- 1,200 to 38,400 bps

P2 – RS-485

- Modbus RTU
- Optically Isolated
- 1,200 to 38,400 bps
- Optional connection with up to 4 external DI Modules

P3 - Ethernet

- 10/100BaseT
- Modbus TCP and Modbus RTU over TCP protocols
- HTTP, SMTP, SNMP, SNMP
- Firmware upgrade via Ethernet port
- Configurable IP Port Number for Modbus TCP and HTTP



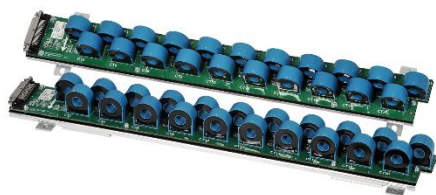
Lower Connectors



Upper Connectors



Touch Screen HMI



CT Strips



Branch SCCT Adapter Board



Branch Cable



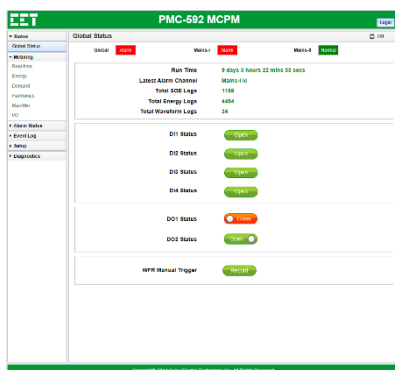
Mains SCCT



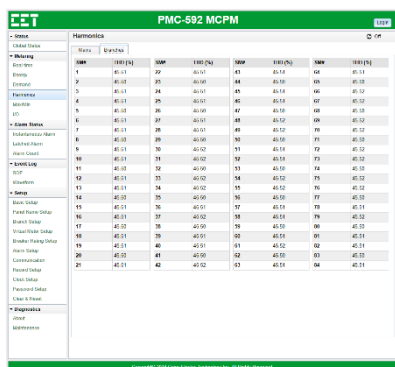
100-1600A Branch SCCT



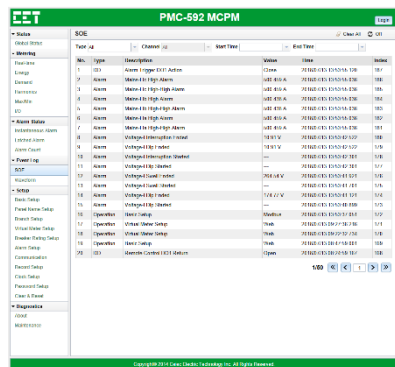
RTD Temperature Sensor



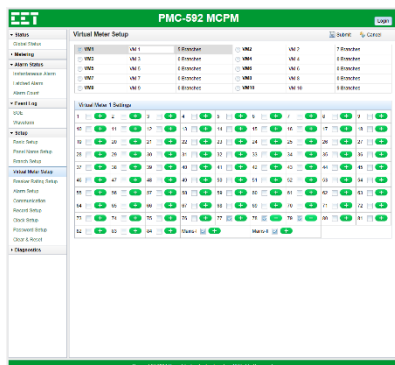
Global Status



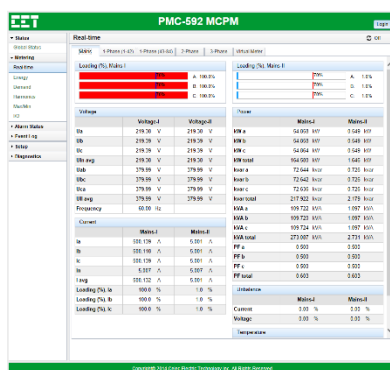
Branches-THD



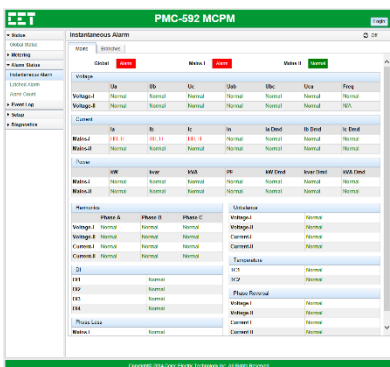
SOE



Virtual Meter Setup



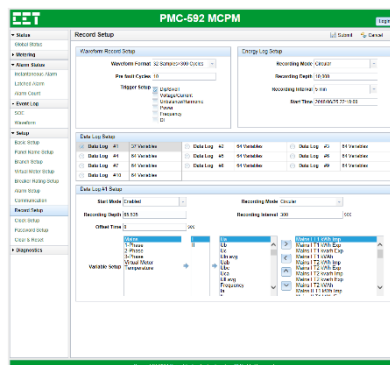
Real-Time Measurements



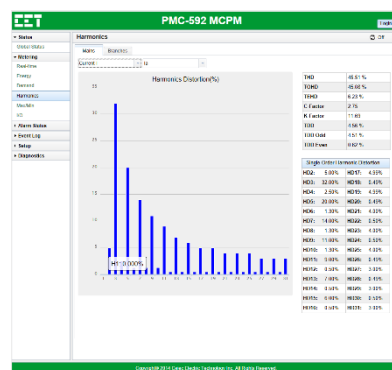
Instantaneous Alarm



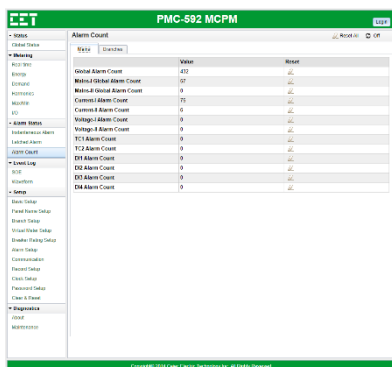
Waveform



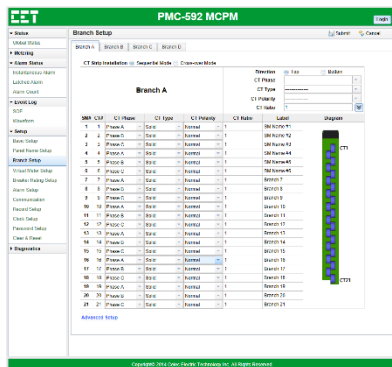
Data Recorder Setup



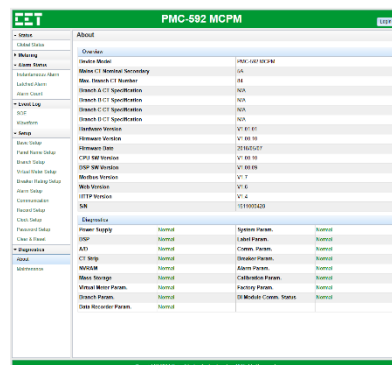
Mains-Harmonics



Alarm Count



Branch Setup



Diagnostics

Accuracy

Parameters	Accuracy	Resolution
Mains Voltage	±0.2%	0.01V
Mains I1 - I4	±0.2%	0.001A
kW, kVA	IEC 62053-22 Class 0.5S for Mains	0.001kX
kWh, kVAh	IEC 62053-21 Class 1 for Branches	0.1kXh
kvar, kvarh	IEC 62053-23 Class 2	0.001kvar 0.1kvarh
PF	1%	0.001
Frequency	±0.02 Hz	0.01Hz
Harmonics	IEC 61000-4-7 Class B	0.01%
K-Factor	IEC 61000-4-7 Class B	0.01
RTD	±1.0°	0.1°

Technical Specifications

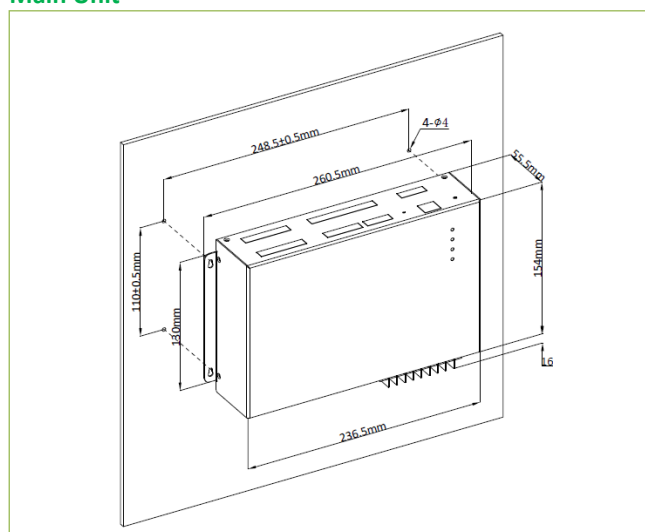
Main Voltage Inputs (V1, V2, V3, VN)	
Standard (Un)	277ULN/480ULL
Range	10% to 120% Un
PT Ratio	
Mains I/II-Primary	1-1,000,000V
Mains I/II-Secondary	1-480V
Overload	2xUn continuous, 4xUn for 1s
Burden	<0.05VA@277ULN per phase
Frequency	45-65Hz
Mains Current Inputs	
I Nominal (In)	5A/1A (CT rated Input)
Range	1% to 120%
Starting Current	0.3% of In
CT Ratio	6000 max. for 5A, 30000 max. for 1A
Overload	1.2xIn continuous, 10xIn for 1s
Burden	<0.3VA per phase
Power Supply for Main Unit (L+, N-)	
Standard	95-277VAC/DC, ±10%, 47-440Hz
Burden	<6W
Branch Inputs	
CT Ratio	400 Maximum
Burden	<0.05VA per phase
Starting Current	0.2% Imax
Solid-Core CT Strip	
100A	In=100A, Imax=100A, Range= 0.2%-100%
5A	In=5A, Imax=10A, Range= 1%-100%
Split-Core CT	
100A	In=100A, Imax=120A, Range= 5%-120%
200A	In=200A, Imax=240A, Range= 5%-120%
400A	In=400A, Imax=480A, Range= 5%-120%
800A	In=800A, Imax=960A, Range= 5%-120%
1600A	In=1.6kA, Imax=1.92kA, Range= 5%-120%
Solid-Core CT	
400A	In=400A, Imax=480A, Range= 5%-120%
800A	In=800A, Imax=960A, Range= 5%-120%
Digital Inputs (DI1, DI2, DIC)	
Type	Dry contact, 24VDC internally wetted
Sampling	1000Hz
Debounce	1-9999 ms programmable
Digital Outputs (DO11, DO12, DO21, DO22)	
Type	Form A Mechanical Relay
Loading	5A@250VAC/30VDC
RTD Inputs (TC11, TC12, TC21, TC22)	
Type	PT100
Range	-40 °C to 200 °C
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
Pollution Degree	2
Overvoltage Category	CAT III
Mechanical Characteristics	
Enclosure	Galvanized Steel
Unit Dimensions	260.5x154x55.5mm
IP Rating	50

Standards of Compliance

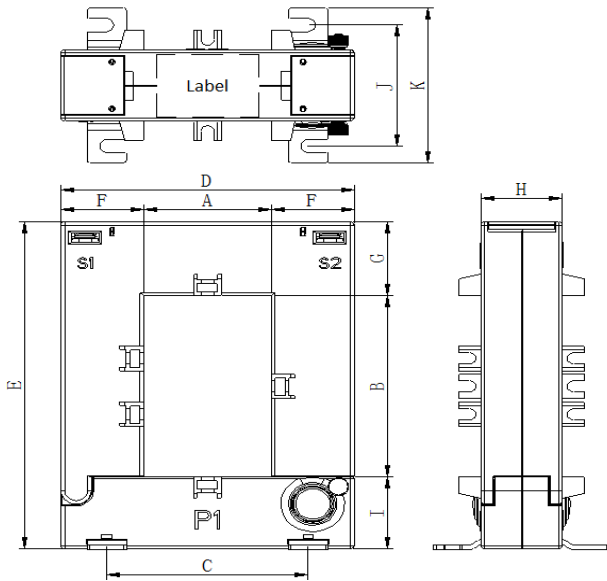
Safety Requirements	
LVD Directive 2014 / 35 / EU	EN 61010-1: 2010 EN 61010-2-030: 2010 IEC 61557-12: 2018 (PMD)
Electrical Safety in Low Voltage Distribution Systems up to 1000Vac and 1500Vdc	
Insulation	
AC Voltage	3.5kV@1 minute
Insulation Resistance	>100MΩ
Impulse Voltage	6kV, 1.2/50μs
Electromagnetic Compatibility	
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: 2014+A1: 2017
Conducted Disturbances	EN 61000-4-6: 2014
Magnetic Fields	EN 61000-4-8: 2010
Voltage Dips and Interruptions	EN 61000-4-11: 2004+A1: 2017
Oscillatory Waves	EN 61000-4-12: 2017
Emission Tests	
Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	EN 55011: 2016
Electromagnetic Compatibility of Multimedia Equipment - Emission Requirements	EN 55032: 2015
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
Mechanical Tests	
Spring Hammer Test	IEC 62052-11: 2003
Vibration Test	IEC 62052-11: 2003
Shock Test	IEC 62052-11: 2003

Dimensions

Main Unit

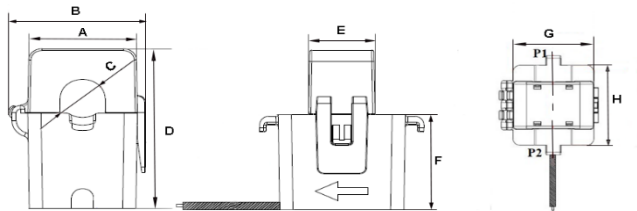


PMC-SCCT-xxxxA-1A-A (400A – 1000A for Mains Inputs)



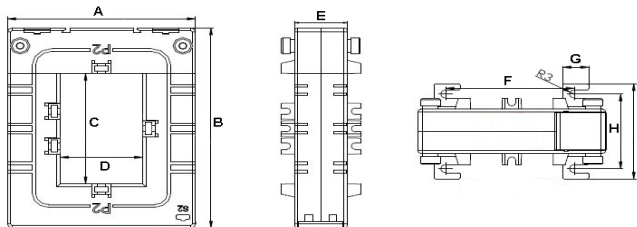
Dimension (mm)	A	B	C	D	E	F	G	H	I	J	K
PMC-SCCT-400A-1A-A	50	80	78	114	145	32	32	32	33	52.5	67.5
PMC-SCCT-600A-1A-A	50	80	78	114	145	32	32	32	33	52.5	67.5
PMC-SCCT-800A-1A-A	80	80	108	144	145	32	32	32	33	52.5	67.5
PMC-SCCT-1000A-1A-A	80	120	108	144	185	32	32	32	33	52.5	67.5

PMC-SCCT-xxxxA-40mA-x-A (100A to 400A for Branch Inputs)



Dimension (mm)	A	B	C	D	E	F	G	H
PMC-SCCT-100A-40mA-16-A	30.3	38	16.1	48.9	19.9	28.6	30.7	33.9
PMC-SCCT-200A-40mA-24-A	44.3	53.5	24.1	70	20	40.5	45	40.2
PMC-SCCT-400A-40mA-35-A	57.3	67	35.1	83	22.5	47	58.2	42.8

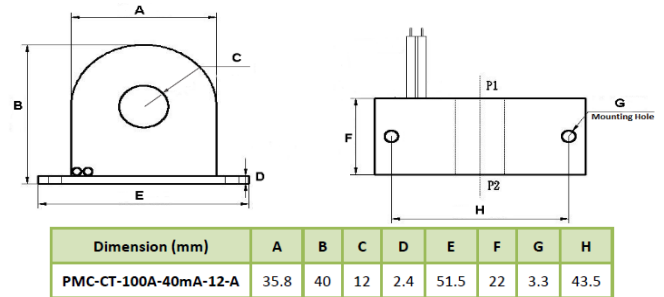
PMC-SCCT-xxxxA-40mA-A (800A – 1600A for Branch Inputs)



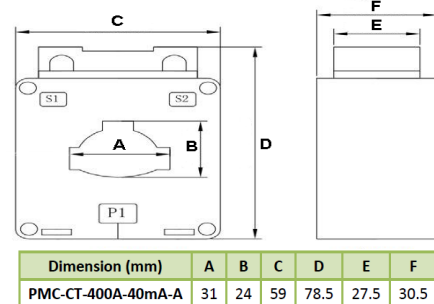
Dimension (mm)	A	B	C	D	E	F	G	H	I
PMC-SCCT-800A-40mA-A	114	145	80	50	32	77	16	50	65
PMC-SCCT-1600A-40mA-A	143	191	129	55	49.2	108	15.8	54	69

Solid Core CTs

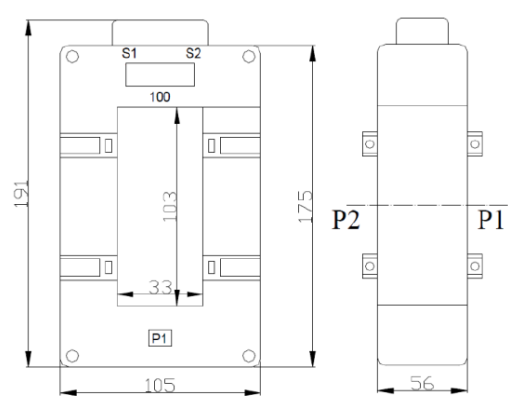
PMC-CT-100A-40mA-12-A (100A for Branch Inputs)



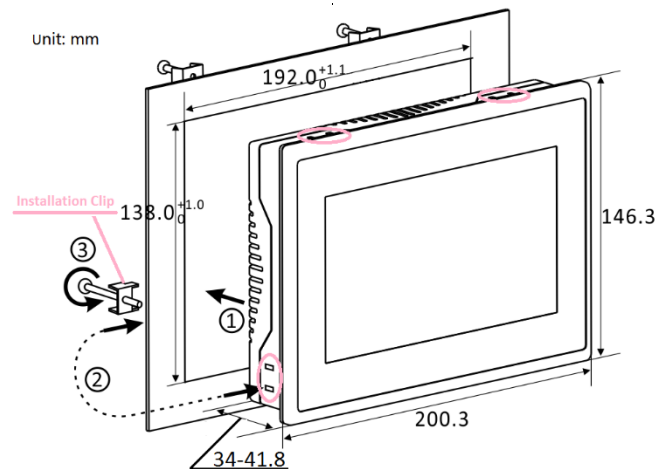
PMC-CT-400A-40mA-A (400A for Branch Inputs)



PMC-CT-800A-40mA-A (800A for Branch Inputs)



HMI (Optional)



Version 20220330

Product Code	Description
PMC- 592 Multi Circuit Power Meter	
Functionality A The PMC-592 Base Unit comes with 2xMains Inputs, each with 3-phase Voltages and 4-phase Currents, 2xRTD Inputs, 2xDI, 2xDO, 1xRS-422/485 Port (HMI Interface), 1xRS-485 Port and 1x100BaseT Port. It supports up to 4 CT Branches with a maximum 21 CTs per Branch.	
Current Rating for the 2 Mains Feeders 5 5A: Standard 1 1A	
Voltage Rating for the 2 Mains Feeders 3 277VLN/480VLL	
Control Power Ratings 2 95-277 VAC/DC, 47-440Hz	
Power System Frequency 5 50Hz 6 60Hz	
Current Rating for Branch Feeders 100 100A Branch Current Inputs * Select this option for use with 100A Fixed Core CT Strip or with CT Adapter Board and 100A-1600A Branch SCCTs 010 10/51A CT Inputs * This option cannot be used with Branch SCCTs	
Language Version for Front Plate E English: Standard for International	
PMC-592 - A 5 3 2 5 100 E	PMC-592-A5325100E (Standard Model)

- 1) The PT100 sensor for the RTD Input is an optional item.
- 2) Please refer to PMC-592 Accessories for the PT-100 sensor, Mains SCCT, Branch SCCT, Branch CT Strip, CT Adapter Board and Branch Circuit Cable options.
- 3) The PMC-592's HMI with 7" LCD with 24VDC power supply module is an optional item.
- 4) Please refer to the PMC-592 Accessories for the different options of Branch Circuit Cable Length for connecting the Main Unit to the CT Strip or the SCCT Adapter Board. The Branch Circuit Cable must be ordered separately and can be ordered with different cable length for each Branch Circuit. Please order one Branch Circuit Cable for each Branch.

HMI (Optional)

Version 20220330

Product Code	Description
PMC- 592-HMI	
Basic Function A 7" TFT LCD, 800x480, 1xRS-422/485 port, a RS-422 cable and an external 24VDC Switching Power Supply C Same as 'A' but supports two PMC-592 (168 feeders) D Same as 'A' but supports four PMC-592 (336 feeders)	
Interface Language E English	
PMC-592-HMI - A E	PMC-592-HMI-AE (Standard Model)

*The standard cable length for connecting the HMI to the PMC-592 Main Unit is 3.0m.
Please contact the factory in advance for special requirements.

PMC-592 MCPM Multi-Circuit Power Monitor

Accessories

Version 20220330

PMC-592 Accessories					
Branch CT Strips					
Model #	Specifications	Accuracy	Inner Diameter		
PMC-CTS-21A100	21 Fixed Type CT, 100A, 3/4" spacing	0.1	11mm		
PMC-CTS-21E100	21 Fixed Type CT, 100A, 1" spacing	0.1	11mm		
PMC-CTS-21A010	21 Fixed Type CT, 5A, 3/4" spacing	0.1	11mm		
PMC-CTS-12A100	12 Fixed Type CT, 100A, 3/4" spacing	0.1	11mm		
PMC-CTS-12A010	12 Fixed Type CT, 5A, 3/4" spacing	0.1	11mm		
CT Adapter Board for Split-Core CT					
Model #	Description				
PMC-CT-ACB	To connect up to 21 individual Split-Core or Solid-Core CTs to this board				
Branch Circuit Cable					
Model #	Cable Length	Diameter	Max. Resistance at 20°C		
PMC-BCC-0.4	0.4m	8.2mm	237Ω/Km		
PMC-BCC-1	1.0m	8.2mm	237Ω/Km		
PMC-BCC-1.8	1.8m	8.2mm	237Ω/Km		
PMC-BCC-3	3.0m	8.2mm	237Ω/Km		
PMC-BCC-5	6.0m	8.2mm	237Ω/Km		
PMC-BCC-10	10.0m	8.2mm	237Ω/Km		
Optional Split-Core CT for Mains (Output Wire Length = 2.0m)					
Split-Core CT Model #	Current Ratio	Accuracy	Aperture (mm)	Load	
PMC-SCCT-400A-1A-A	400A/1A	0.5	50x80	5Ω	
PMC-SCCT-600A-1A-A	600A/1A	0.5	50x80	5Ω	
PMC-SCCT-800A-1A-A	800A/1A	0.5	50x80	5Ω	
PMC-SCCT-1000A-1A-A	1000A/1A	0.5	80x120	5Ω	
Optional Solid-Core CT for Branch Circuits					
Split-Core CT Model #	Current Ratio	Accuracy	Aperture (mm)	Output Wire Length	Load
PMC-SCCT-100A-40mA-16-A	100A/40mA	0.5	Ø16	2m	20Ω
PMC-SCCT-200A-40mA-24-A	200A/40mA	0.5	Ø24	2m	10Ω
PMC-SCCT-400A-40mA-35-A	400A/40mA	0.5	Ø35	2m	10Ω
PMC-SCCT-800A-40mA-A	800A/40mA	0.5	80x50	Not included	10Ω
PMC-SCCT-1600A-40mA-A	1600A/40mA	0.5	129x55	Not included	10Ω
Optional Solid-Core CT for Branch Circuits					
Solid-Core CT Model #	Rating	Accuracy	Aperture (mm)	Output Wire Length	Load
PMC-CT-100A-40mA-12-A	100A/40mA	0.2	Ø12	2m	20Ω
PMC-CT-400A-40mA-A	400A/40mA	0.2	31x24	Not included	20Ω
PMC-CT-800A-40mA-A	800A/40mA	0.2	103x33	Not included	20Ω
Optional PT100 Sensor					
PT100 Model #	Cable Length				
W2PT-1031	3m				

Contact us



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