

3-Phase LoRa DIN Energy Meter



The PMC-352-C 3-Phase LoRa DIN Energy Meter is CET's latest offer for the wireless IoT energy monitoring market using the LoRa technology for its wireless communication capability. Designed in a compact DIN form factor measuring 36x65x90mm, it is perfect for energy and condition monitoring applications in space-limited power distribution board. The PMC-352-C comes standard with 4xNTC Inputs for temperature monitoring and 3xDI for status monitoring. With standard RS-485 and optionally LoRa supporting the Modbus RTU protocol and IEC 62053-21 Class 1 compliance, the PMC-352-C becomes a vital component of an intelligent, distributed and wireless IoT based EMS or Condition Monitoring System.

Typical Applications

- Industrial, Commercial and Utility Substation Monitoring
- Sub-metering and Cost Allocation
- Wireless Energy & Condition Monitoring of Busbar or Machines
- Building, Factory and Process Automation
- Energy Management and Power Quality Monitoring
- Production Line Energy Management Refinement

Features Summary

Ease of use

- Easy installation with DIN Rail mounting, no tools required
- Simple commissioning and low-deployment cost with Split-Core CT/Rogowski Coil and wireless IoT communication

Basic Measurements

- ULN, ULL per Phase and Average
- Current per Phase and Average with calculated Neutral
- P, Q, S and PF per Phase and Total
- kWh/kvarh Import/Export/Net/Total and kVAh Total
- Frequency and Device Operating Time (Running Hours)

Enhanced Measurements

- U and I THD, TOHD, TEHD and Individual Harmonics up to 31st
- U and I Unbalance and Phase Angles
- Fundamental P and Displacement PF
- kvarh Q1-Q4
- Present Demands for P/Q/S Total and per Phase Current

Setpoints

- 10 user programmable Setpoints with extensive list of monitoring parameters including Voltage, Current, Power and THD, etc.
- Configurable thresholds, time delays and parameters

SOE Log

- 16 events time-stamped to ± 1 ms resolution
- Setup changes, Setpoint, DI Status changes, Clear actions, etc.

Standard I/O

- 3xDI for Status Monitoring or Utility Pulse Counting
- 4xNTC Inputs for Temperature Monitoring (sensor not included)

Diagnostics

- Frequency Out-of-Range, Loss of Voltage / Current
- P Direction per Phase and Total, Possible incorrect CT Polarity
- Incorrect U & I Phase Sequence

Communications

- Optically isolated RS-485 port at 1200 to 38,400 bps
- Built-in LoRa with configurable ISM Bands for EU863-870, RU864-870, IN865-867, US902-928, AU915-928, AS920-923 and AS923-925
- Modbus RTU protocol

System Integration

- Supported by our PecStar® iEMS and free configuration Software
- Easy integration into other Automation or SCADA systems via Modbus RTU protocol

Accuracy

Parameters	Accuracy	Resolution
Voltage	$\pm 0.5\%$	0.0001V
Current	$\pm 0.5\%$	0.0001A
P, Q, S	$\pm 1.0\%$	0.0001kW/kvar/kVA
kWh	IEC 62053-21 Class 1	0.01kWh
kvarh	IEC 62053-23 Class 2	0.01kvarh
PF	$\pm 1.0\%$	0.0001
Frequency	± 0.02 Hz	0.0001Hz
THD	IEC 61000-4-7 Class II	0.0001%
Temperature	$\pm 1^\circ\text{C}$	0.001 $^\circ\text{C}$

Standards of Compliance

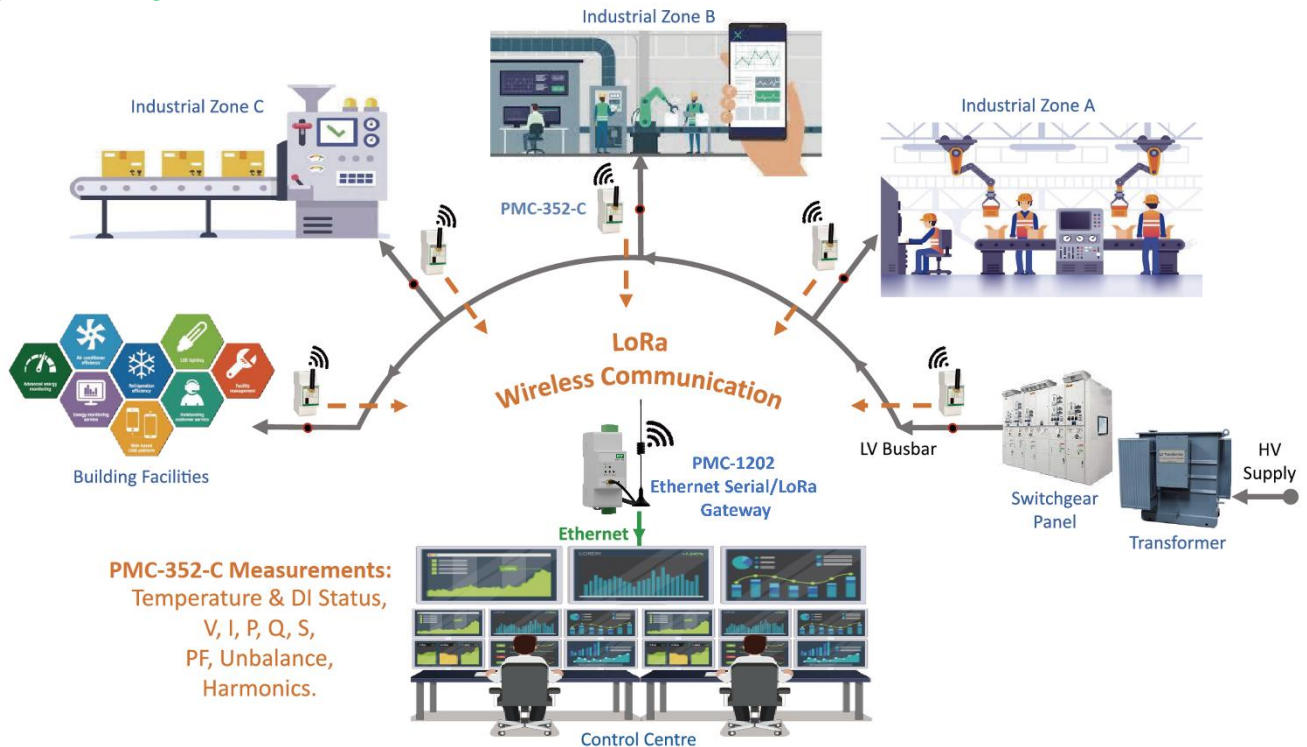
Safety Requirements	
CE LVD 2014/35/EU	EN 61010-1: 2010 + A1: 2019 EN IEC 61010-2-030: 2021 + A11: 2021
Electrical Safety in Low Voltage Distribution Systems up to 1000VAC and 1500VDC	IEC 61557-12: 2021 (PMD)
Insulation	EN 61010-1: 2010 + A1: 2019
AC Voltage: 2kV @ 1 minute Insulation Resistance: >100M Ω Impulse Voltage: 6kV, 1.2/50 μs	
Electromagnetic Compatibility CE EMC Directive 2014/30/EU (EN IEC 61326: 2021)	
Immunity Tests	
Electrostatic Discharge	EN 61000-4-2: 2009
Radiated Fields	EN 61000-4-3: 2020
Fast Transients	EN 61000-4-4: 2012
Surges	EN 61000-4-5: 2014+ A1: 2017
Conducted Disturbances	EN 61000-4-6: 2014 + AC: 2015
Magnetic Fields	EN 61000-4-8: 2010
Voltage Dips and Interruptions	EN IEC 61000-4-11: 2020
Ring Wave	EN 61000-4-12: 2017
Immunity Standard for Industrial Environment	EN IEC 61000-6-2: 2019
Emission Tests	
Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	EN 55011: 2016 + A1: 2017 + A11: 2020 + A2: 2021
Electromagnetic Compatibility of Multimedia Equipment - Emission Requirements	EN 55032: 2015+A11: 2020 + A1: 2020
Limits for Harmonic Current Emissions for Equipment with Rated Current ≤ 16 A	EN IEC 61000-3-2: 2019 + A1: 2021
Limitation of Voltage Fluctuations and Flicker in Low-Voltage Supply Systems for Equipment with Rated Current ≤ 16 A	EN 61000-3-3: 2013 + A1: 2019 + A2: 2021
Emission Standard for Residential, Commercial and light-industrial environments	EN 61000-6-4: 2007 + A1: 2011
Mechanical Tests	
Spring Hammer Test	IEC 62052-31: 2015
Vibration Test	IEC 62052-11: 2020
Shock Test	IEC 62052-11: 2020

Designed For Reliability

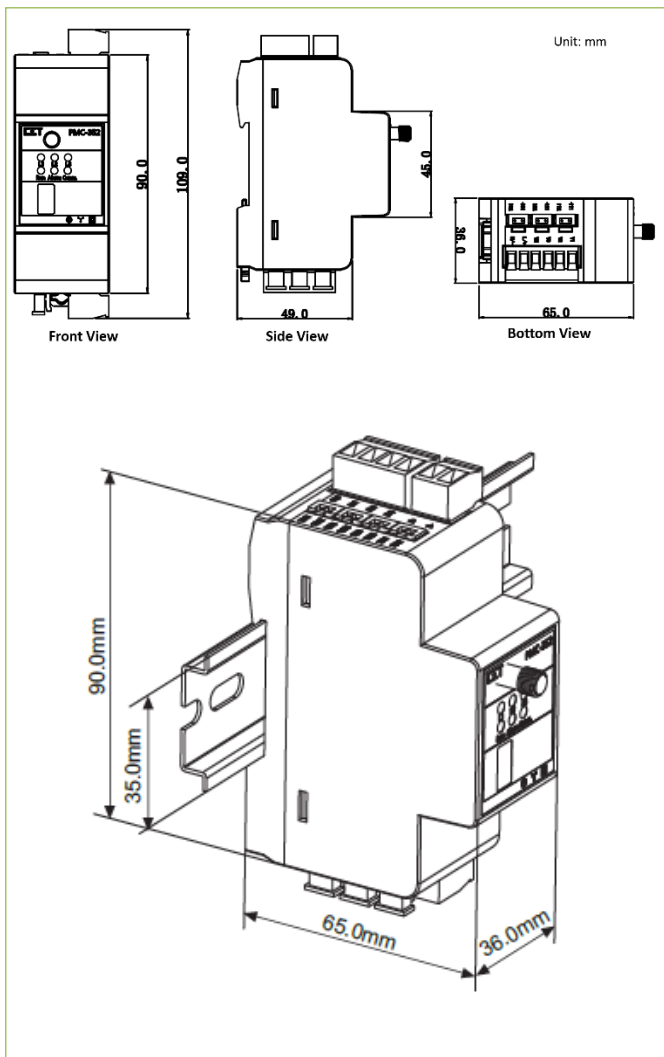
Manufactured To Last



Application Diagram



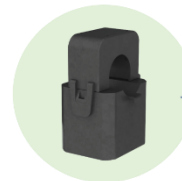
Dimensions and Installation



Accessories

Split-Core CTs and Rogowski Coil

Split-Core CTs' Appearances & Specifications

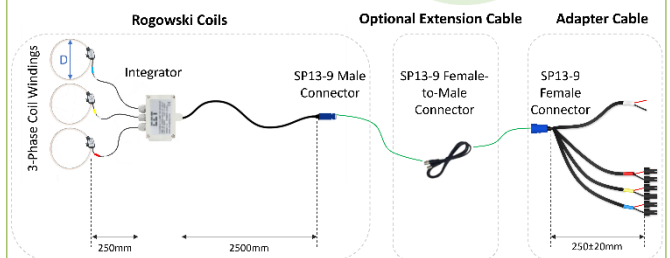


PMC-SCCT-5A-2mA-16-A
Input: 5A
Output: 2mA

PMC-SCCT-100A-40mA-16-A/
PMC-SCCT-200A-40mA-24-A/
PMC-SCCT-400A-40mA-35-A
Input: 100A/200A/400A
Output: 40mA



PMC-SCCT-800A-40mA-A/
PMC-SCCT-1600A-40mA-A
Input: 800A/1600A
Output: 40mA



Antenna and Connecting Cable



Antenna



PMC-BCC-350-2
Length: 2m

Designed For Reliability

Manufactured To Last



Technical Specifications

Voltage Inputs (V1, V2, V3, VN)		
Voltage (Un) Range	277VLN/480VLL 40V to 1.2Un (88V to 550V for Self-Powered option)	
Burden	<0.02VA/phase	
Frequency	45-65Hz	
Current Inputs (I11, I12, I21, I22, I31, I32)		
Current (In) Range Starting Current External SCCTs	SCCT Option 40mA 0.15%-100% In 0.15% In	SCCTA Option 2mA 0.1%-120% In 0.2% In
	100A/40 mA, 200A/40mA, 400A/40mA, 800A/40mA, 1600A/40mA	5A/2mA
	SCCT Option (Rogowski Coil) 40mA 10%-110% In 0.4% In	
	<0.25VA per phase	
Power Supply (L/+, N/-)		
Standard	60-264VAC/DC, ±10%, 47-440Hz	
Optional	88V-550VAC, Self-Powered via Uca (U31)	
Burden	<2W	
Digital Inputs (DI1, DI2, DI3, DIC)		
Type	Dry contact, 12VDC internally wetted	
Sampling	1000Hz	
Hysteresis	1ms minimum	
NTC Temperature Inputs (TC1, TC2, TC3, TC4)		
NTC Type	2-Wire Thermistors (sensor not included)	
Measurement Range	-20°C to +140°C	
Communications		
RS-485 (Standard)		
Protocol	Modbus RTU	
Baud Rate	1200/2400/4800/9600/19200/38400 bps	
LoRa		
RF Range	860-930 MHz (Configurable)	
ISM Bands	EU863-870, RU864-870, IN865-867, US902-928, AU915-928, AS920-923, AS923-925	
RF Output Power	18.58 dBm (Maximum)	
Receiver Sensitivity	-124 dBm (Maximum)	
Output Watts	0.03 (Typical)	
FCC Part 15C	Certified by TCB	
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	
Mechanical Characteristics		
Mounting	DIN Rail	
Unit Dimensions	36x65x90mm	
IP Rating	IP30	

Your Local Representative

Revision Date: September 15, 2026

Ordering Information

Version 20251217	
Product Code	Description
PMC-352 3-Phase LoRa DIN Energy Meter	
Basic Function	
C	Multifunction Measurements, 1xRS-485
Input Current	
A	40mA Input for use with 100A/40mA, 200A/40mA, 400A/40mA, 800A/40mA, 1600A/40mA SCCTs and 400A/40mA, 1200A/40mA, 2500A/40mA, 5000A/40mA Rogowski Coils (SCCTs and Rogowski Coils not included)
B	2mA Input for use with 5A/2mA SCCT (SCCTs not included)
Input Voltage	
3	277VLN/480VLL ±15%
Power Supply	
2	60-264VAC/DC, 47-440Hz
N*	88-550VAC, Self-Powered from Uca (or U31)*
Frequency	
5	45-65Hz
I/O	
A	3xDI
Expansion Communication*	
N	None
7*	LoRa (860-930 MHz) configurable for EU863-870, RU864-870, IN865-867, US902-928, AU915-928, AS920-923, AS923-925
Language	
E	English
PMC-352 - C A 3 2 5 A N E PMC-352-CA325ANE (Standard Model)	
* Additional charges apply	
^ The Self-Powered option is only supported for 3-phase power system. If the PMC-352-C is used in a single-phase application, Power Supply option 2 should be selected.	

Accessories

Split-Core CTs and Rogowski Coil



Version 20251217

PMC-352-C Accessories					
Split-Core CTs					
Model #	Specification	Accuracy	Aperture (mm)	Cable Length	
PMC-SCCT-100A-40mA-16-A	100A, 1-phase Split-Core CT with Pluggable Connector	0.5	ø16	2m	
PMC-SCCT-200A-40mA-24-A	200A, 1-phase Split-Core CT with Pluggable Connector	0.5	ø24	2m	
PMC-SCCT-400A-40mA-35-A	400A, 1-phase Split-Core CT with Pluggable Connector	0.5	ø35	2m	
PMC-SCCT-800A-40mA-A	800A, 1-phase Split-Core CT	0.5	80x50	See Note 2)	
PMC-SCCT-1600A-40mA-A	1600A, 1-phase Split-Core CT	0.5	130x55	See Note 2)	
PMC-SCCT-SA-2mA-16-A	5A/2mA, 1-phase Split-core CT with Pluggable Connector	1.0	ø16	2m	

1) Please refer to Cable Length for details and contact the factory in advance for special requirements.

2) The PMC-SCCT-800A-40mA-A and PMC-SCCT-1600A-40mA-A come with PMC-BCC-350-2, which is a 2m cable with 2-Pin Black Pluggable Connector.

3) Each PMC-352-C may be equipped with 3 pcs of SCCT.

3-phase Rogowski Coil for Current Input (I1, I2, I3)						
Model #	Specification	Accuracy	Linearity	Power Supply	Aperture (mm)	Cable Length
PMC-RC-400A-40mA-3P-100-PY-W-P	400A/40mA, 3-phase Rogowski Coil with Adapter Cable (Pluggable Connector) and	±0.5% (5%-110%) In @25 °C	±0.2% F.S. (10%-110%) In	10-25 VDC	100	0.25m (coil winding to integrator) + 2.5m (integrator to SP13-9 male connector) + 0.25m Adapter Cable
PMC-RC-1200A-40mA-3P-150-PY-W-P	1200A/40mA, 3-phase Rogowski Coil with Adapter Cable (Pluggable Connector) and	±0.5% (5%-110%) In @25 °C	±0.2% F.S. (10%-110%) In	10-25 VDC	150	0.25m (coil winding to integrator) + 2.5m (integrator to SP13-9 male connector) + 0.25m Adapter Cable
PMC-RC-2500A-40mA-3P-200-PY-W-P	2500A/40mA, 3-phase Rogowski Coil with Adapter Cable (Pluggable Connector) and	±0.5% (5%-110%) In @25 °C	±0.2% F.S. (10%-110%) In	10-25 VDC	200	0.25m (coil winding to integrator) + 2.5m (integrator to SP13-9 male connector) + 0.25m Adapter Cable
PMC-RC-5000A-40mA-3P-350-PY-W-P	5000A/40mA, 3-phase Rogowski Coil with Adapter Cable (Pluggable Connector) and	±0.5% (5%-110%) In @25 °C	±0.2% F.S. (10%-110%) In	10-25 VDC	350	0.25m (coil winding to integrator) + 2.5m (integrator to SP13-9 male connector) + 0.25m Adapter Cable

Notes

1. The Rogowski Coil comes standard with its power supply and adapter cable. The 5m/10m extension cable can be ordered separately if required.

2. There are a few factors that can affect the Rogowski Coil's measuring accuracy, such as the positioning and alignment, conductor size and proximity and so

Optional Extension Cable for Rogowski Coil	
Model #	Specification
SP13-F-M-5	5m extension cable with SP13-9 female-to-male connectors connecting 3-phase Rogowski Coil and Converter
SP13-F-M-10	10m extension cable with SP13-9 female-to-male connectors connecting 3-phase Rogowski Coil and Converter

Please refer to Cable Length for details and contact the factory in advance for special requirements.

NTC Thermistors

NTC Thermistors	
Model #	Specification
NTC-100, 0.4	1xNTC Sensor with PC-ABS enclosure, thermally conductive silicone pad and 0.4m cable
NTC-100, 1	1xNTC Sensor with PC-ABS enclosure, thermally conductive silicone pad and 1m cable
NTC-1041, 0.3	1x NTC Sensor with black insulated metal protective sleeve, a Pluggable Connector and 0.3m cable
NTC-1041, 1.5	1x NTC Sensor with black insulated metal protective sleeve, a Pluggable Connector and 1.5m cable
NTC-1041, 3.5	1x NTC Sensor with black insulated metal protective sleeve, a Pluggable Connector and 3.5m cable
NTC-1041, M6, 2	1xNTC Sensor with a Ø6mm Ring Connector and 2m cable
NTC-1041, M10, 1	1xNTC Sensor with a Ø10mm Ring Connector and 1m cable
NTC-1041, M10, 2	1xNTC Sensor with a Ø10mm Ring Connector and 2m cable
NTC-1043, M10, 1	3x NTC Sensor as one set, each with heat shrink sleeve (Brown, Black and Grey respectively), Ø10mm Ring Connector, Pluggable Connector and 1m cable
NTC-1044, M10, 1	4x NTC Sensor as one set, each with heat shrink sleeve (Brown, Black, Grey and Blue respectively), Ø10mm Ring Connector, Pluggable Connector and 1m cable
NTC-1043, 3	3xNTC Sensor as one set, each with insulated metal protective sleeve (Yellow, Green and Red), Pluggable Connector and 3m cable
NTC-1044, 2	4xNTC Sensor as one set, each with insulated metal protective sleeve (Yellow, Green, Red and Black), Pluggable Connector and 2m cable

CET Electric Technology Inc.

E: sales@cet-global.com

W: www.cet-global.com