CET Electric Technology

PMC-340-A6
Digital Three-Phase Energy Meter

The PMC-340-A6 Digital Three-Phase Energy Meter is CET's latest offer for the low voltage power/energy metering market featuring DIN-Rail mount, high accuracy, multifunction true RMS measurements and a large, easy to read LCD display. The PMC-340-A6 complies with the IEC 62053-21: 2020 & AS 62053.21: 2023 Class 0.5 and EN 50470-3: 2022 Class C for 100A Direct Connected Input and IEC 62053-22: 2020 & AS 62053.22: 2023 Class 0.5S and EN 50470-3: 2022 Class C for CT Input. The PMC-340-A6 comes standard with a LED as well as a Solid State Pulse Output for energy pulsing. The PMC-340-A6 provides 16MB on-board non-volatile memory for Data Recording and 1xDigital Input for status monitoring and pulse counting for collecting WAGES (Water, Air, Gas, Electric and Steam) information. The standard RS-485 port and Modbus protocol support allows the PMC-340-A6 to become a vital component of an intelligent, multifunction monitoring solution for any Power and Energy Management Systems.

Typical Applications

- DIN-Rail mount energy metering
- Industrial, Commercial and Utility Substation Metering
- Building, Factory and Process Automation
- Sub-metering and Cost Allocation
- NMI/MID compliant Energy Management

Features Summary

Ease of use

- Large, easy to read LCD for both data viewing and configuration
- Two LED indicators for Energy Pulsing and communication activities
- Password protected setup via Front Panel or free software
- Easy installation with DIN-Rail mounting, no tools required
- Direct Connected Input up to 100A without external CT

Basic Measurements

- Multifunction True RMS measurements
  - ULN, ULL, I, Phase Angle, In (calc.), P, Q, S, PF, dPF, Frequency
  - Per-phase and Total kWh and kvarh Imp./Exp./Tot./Net and kVAh, 4-Quadrant kvarh as well as kWh/kvarh Imp./Exp.and kVAh per Tariff
  - Voltage and Current THD, TOHD, TEHD, Individual Harmonics up to 31st and Unbalance
  - Current K-Factor, Crest Factor, TDD, TDD Odd and TDD Even
  - Demand and Max. Demand for I, P, Q, S, ULN, ULL and Temperature
  - Temperature and Operating Time
- Max./Min. Log
- 12 monthly recording of kWh, kvarh Imp./Exp./Tot./Net, kVAh and kvarh Q1-Q4 as well as kWh, kvarh Imp./Exp. and kVAh per Tariff
- Two TOU schedules, each providing
  - 12 Seasons
  - 20 Daily Profiles, each with 14 Periods
  - 90 Holidays or Alternate Days
  - 5 Tariffs, each providing the following information
    - kWh/kvarh Import/Export, kVAh
    - P/Q/S Max. Demands

SOE Log

- 128 events time-stamped to ±1ms resolution

Setpoint

- 20 user-programmable Setpoints with extensive list of monitoring parameters including Voltage, Current, Power, Temperature and DI Status, etc.
- Configurable thresholds and time delay

Pulse Outputs

- 1 Front Panel LED and 1 Solid State Pulse Output for energy pulsing application

Tamper Detection and Alarm

- DI connected to external switch as Setpoint Parameter for Tamper Alarm
- Built-in sensors for Magnetic Tamper Detection
- Alarm Events are stored in SOE Log

Digital Input

- 1 channel for external status monitoring or pulse counting
- Self-excited, internally wetted

Data Recorder

- Two Data Recorder Log of Max. 16 parameters
- Recording Interval from 1 second to 40 days
- Configurable Recording Depth (Max. 65535) and Recording offset
- Capable of recording 16 parameters at 5-min interval for over 7 months
- Available parameters: U, I, P, Q, S, PF, Freq., Temperature, kWh Imp./Exp., kvarh Imp./Exp., Demands and Max. Demands for U, I, P/Q/S Total and DI Pulse Counter, etc.

Communications

- Optically isolated RS-485 port, baud rate from 1,200 to 38,400 bps
- Modbus RTU protocol

Security

- Programmable Password protection for configurations on Front Panel
- 3-level independent security Comm. password protection and different access permissions

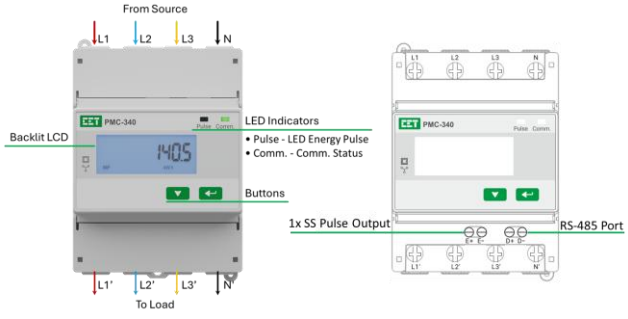
Real-Time Clock

- Battery backed RTC @ 6ppm (≤0.5s/day)

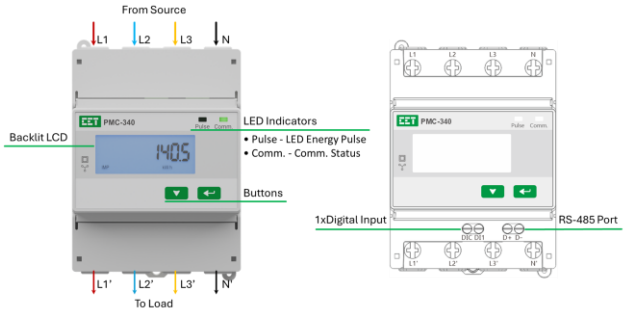
System Integration

- Supported by our PecStar® iEMS and free configuration software
- Easy integration into other Automation or SCADA systems via Modbus RTU protocol
- Compatible with MV-90™

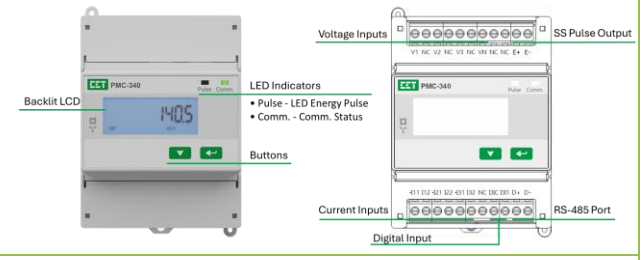
Appearance and Terminals



Direct Connected Input Model with I/O Option A



Direct Connected Input Model with I/O Option B



CT Input Model with I/O Option C

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Technical Specifications

Inputs (L1, L2, L3, N)				
Voltage (Un)	110VAC	220VAC	230VAC	240VAC
Overrange (%Un)	250%	125%	120%	115%
Range (V)	88-276VAC (Self-powered)			
Burden	<2VA/phase			
Direct Input				
Current (In/Imax)	10A/100A			
Range	0.4% In to Imax			
Starting Current (Ist)	0.4% In (40mA)			
Min. Current (Imin)	5% In (0.5A) for IEC/AS compliant 0.3A for MID compliant			
Burden	<0.2VA/phase			
CT Input				
Current (In/Imax)	1A/10A			
Range	0.1% In to Imax			
Starting Current (Ist)	0.1% In (1mA)			
Min. Current (Imin)	1% In (0.01A)			
Burden	<0.2VA/phase			
Frequency	45Hz-65Hz			
Solid State Energy Pulse Output (Selectable - kWh/kvarh)				
Isolation	Optical			
Max. Load Voltage	80VDC			
Max. Forward Current	10mA			
Pulse Width	30-500ms configurable			
Pulse Constant	1-999 999 configurable			
Direct Connected Input	500 imp./kWh (default)			
CT Input	10000 imp./kWh (default for General/NMI Version) 5000 imp./kWh (default for MID Version)			
Communications				
RS-485	Modbus RTU			
Baud Rate	1.2/2.4/4.8/9.6/19.2/38.4 kbps			
Terminal Size				
Direct Connected Input	2.0 x 2.5mm			
CT Input	2.5 x 2.8mm			
Maximum Wire Size				
Direct Connected Input	0.2-1.2mm² (16-30AWG)			
CT Input	0.2-3.5mm² (12-30AWG)			
Tightening Torque				
Direct Connected Input	3 kgf.cm/M3/2.66 lb-in/0.3 N.m			
CT Input	2.7 kgf.cm/M2.5/2.39 lb-in/0.27 N.m			
Maximum Torque				
Direct Connected Input	4.5 kgf.cm/M3/3.9 lb-in/0.44 N.m			
CT Input	4.5 kgf.cm/M2.5/3.9 lb-in/0.44 N.m			
Environmental Conditions				
Specified Operating Temp.	-25°C to +55°C			
Limit Operating Temp.	-25°C to +70°C			
Storage/Transport Temp.	-40°C to +85°C			
Humidity	5% to 95% non-condensing			
Atmospheric Pressure	70 kPa to 106 kPa			
Pollution Degree	2 (indoor)			
Utilization Category	UC3			
Mechanical Characteristics				
Mounting	DIN Rail			
Weight	0.54Kg			
Unit Dimensions	72x95x70mm			
Shipping Dimensions	17x14x11cm			
IP Rating	51 (Front), 30 (Body)			

Standards of Compliance

Safety Requirements	
CE LVD 2014/35/EU	EN 61010-1: 2010 + A1: 2019 EN 61010-2-030: 2021 + A11: 2021
Electrical Safety in Low Voltage Distribution Systems up to 1000Vac and 1500 Vdc	IEC 61557-12: 2021 (PMD)
Products Safety Requirements and Tests	IEC 62052-31: 2015 AS 62052.31: 2017+A1:2021 EN 62052-31: 2016
NMI	M13-1
AC Voltage	4kV @ 1 minute
Impulse Voltage	6kV, 1.2/50µs
Electromagnetic Compatibility EMC 2014/30/EU (EN IEC 61326: 2021)	
Immunity Tests	
Electrostatic Discharge	EN 61000-4-2: 2009
Radiated Fields	EN IEC 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
Magnetic Fields	EN 61000-4-8: 2010
Voltage Dips & Interruptions	EN IEC 61000-4-11: 2020
Ring Wave	EN 61000-4-12: 2017
Immunity Standard for Industrial Environments	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 ≤16A	EN IEC 61000-3-2: 2019 + A1: 2021
Limitation of Voltage Fluctuations and Flicker in Low-Voltage Supply Systems for Equipment with Rated Current ≤16A	EN 61000-3-3: 2013 + A1: 2019 + A2: 2021
Emission Standard for Industrial Environments	EN IEC 61000-6-4: 2019
Mechanical Tests	
Spring Hammer Test	EN 62052-31:2016 & AS 62052.31: 2017 + A1:2021
Vibration Test	EN IEC 62052-11:2021+A11 & AS 62052.11: 2023
Shock Test	EN IEC 62052-11:2021+A11 & AS 62052.11: 2023
Revenue Metering Approval	
NMI M13-1 of Australia	Approval Mark: NMI 14/2/127
MID Directive 2014/32/EU	Cert. No.: M4 69268469 0001 (Direct Connected) M4 69268470 0001 (CT Input)

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Accuracy

Parameters	Accuracy		Resolution
	Direct Connected Input	CT Input	
Voltage	±0.2%		0.01V
Current	±0.2%		0.001A
P, Q, S	±0.5%		0.001W/var/VA
kWh, kVAh	IEC 62053-21: 2020 & AS 62053.21: 2023 Class 0.5 & EN 50470-3: 2022 Class C	IEC 62053-22: 2020 & AS 62053.22: 2023 Class 0.5S & EN 50470-3: 2022 Class C	0.1/0.01/ 0.001kXh Selectable
kvarh	IEC 62053-24: 2020 Class 1		
PF	±0.5%		0.001
Frequency	±0.02Hz		0.01Hz
In (Cal.)	±1.0%		0.001A
THD	IEC 61000-4-7 Class II		0.001%
Temp.	±1°C		0.1°C

Notes:

1. For the PMC-340-A6 device, the default resolution for both real-time energy values and recorded energy values is 0.1 kXh (MID Certified), with a scale of x0.1. To meet the diverse needs of international customers, during the order-placing stage, customers can specify the factory - configured Energy Resolution to be either 0.01 kXh or 0.001 kXh (Australian NMI Approval). Correspondingly, the Scale of Energy Registers will change to x0.01 or x0.001 respectively.
2. It should be noted that the Energy Resolution can only be set during the factory production process. Both real-time energy values and recorded energy values will be accumulated and recorded in accordance with this setting, and no modification can be made thereafter.

Ordering Information

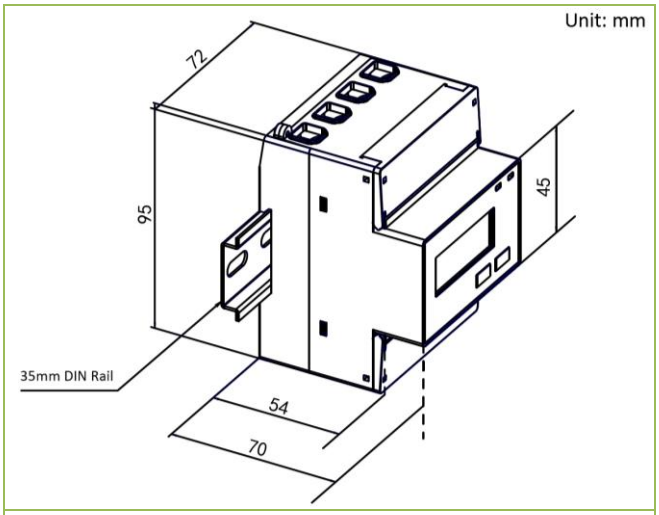
Version 20250110

Product Code	Description
PMC-340 Digital Three-Phase Energy Meter	
Basic Function	
A6	3-Phase Metering, Bi-directional Energy, Demands and Max. Demands, Max. & Min., Monthly Energy Log, Multi-Tariff TOU, Setpoint, SOE Log, Data Recorder Log, 16MB Log Memory
Display	
L	7-segment Backlit LCD Display
Input Current~	
A	10A (100A), Direct Connected Input
B	1A (10A), CT Input
Input Voltage	
3	110-240VLN/190-415VLL (-20% to +15%)
System Frequency	
5	45-65Hz
I/O~	
A	1xSS Pulse Output
B	1xDI
C	1xSS Pulse Output + 1xDI
Communications	
A	1xRS-485 Port
Protocol	
M	Modbus
Display Language	
E	English

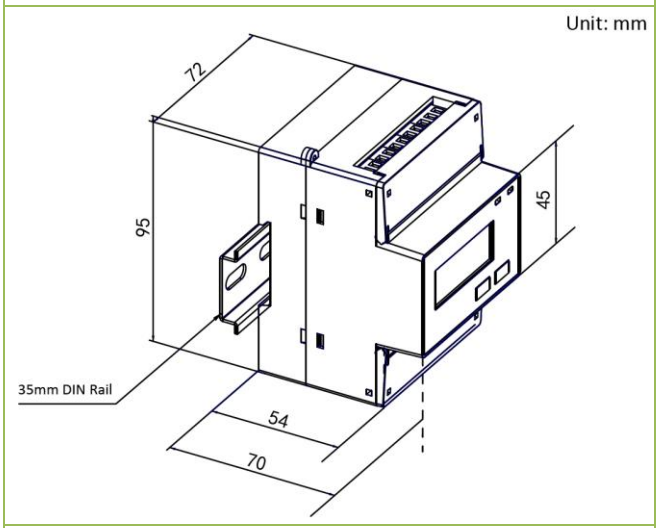
PMC-340	-	A6	L	A	3	5	A	A	M	E	PMC-340-A6LA35AAME (Standard Model)

~Device with Input Current "A" can work with I/O option "A" or "B".
Device with Input Current "B" is only available with I/O option "C".

Dimensions and Installation



Direct Connected Input Model



CT Input Model

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Your Local Representative

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