

PMC-340-A6 Digital Three-Phase Energy Meter

Digital Three-Phase Energy Meter



Overview

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 for 100A Direct Connected Input and IEC 62053-22: 2020 & AS 62053.22: 2023 Class 0.5S 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 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 PMC Setup software
- Easy installation with DIN-Rail mounting, no tools required
- Direct Connected Input up to 100A without external CT

SOE Log

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• 128 events time-stamped to ±1ms resolution

Basic Measurements

- Multifunction True RMS measurements
 - ULN, ULL, I, Phase Angle, In (calculated), P, Q, S, PF, dPF
 - Per-phase and Total kWh and kvarh Imp./Exp./Tot./Net and kVAh,
 4-Quadrant kvarh as well as kWh/kvarh Imp./Exp./Tot./Net per Tariff
 - $\circ~$ Voltage and Current THD, TOHD, TEHD, Individual Harmonics up to $31^{\rm st}$ 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. Demand

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 at 5VDC

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

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)
- Battery Life > 10 years

System Integration

- Supported by our PecStar[®] iEMS and PMC Setup
- Easy integration into other Automation or SCADA systems via Modbus RTU protocol

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Accuracy

Parameters	Accuracy	Resolution	
Voltage	±0.2	0.01V	
Current	±0.2	2%	0.001A
P, Q, S	±0.	5%	0.001W/var/VA
	Direct Connected Input	CT Input	
kWh, kVAh	IEC 62053-21: 2020 & AS 62053.21: 2023 Class 0.5	IEC 62053-22: 2020 & AS 62053.22: 2023 Class 0.5S	0.01kXh
kvarh	IEC 62053-24	0.01kvarh	
PF	±0.	0.001	
Frequency	±0.0	0.01Hz	
In (Cal.)	±1.0	0.001A	
THD	IEC 61000-	0.001%	
Temperature	±1	0.1°C	

Technical Specifications

Inputs (L1, L2, L3, N)							
Voltage (Un)	220VAC	230VAC	240VAC				
Overrange (%Un)	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)						
Minimum Current (Imin)	5% ln (0.5A)						
Burden	<0.2VA/phase						
CT Input							
Current (In/Imax)	1A/10A						
Range	0.1% In to Imax						
Starting Current (Ist)	0.1% ln (1mA)						
Minimum Current (Imin)	1% In (0.01A)						
Burden	<0.2VA/phase						
Frequency	45Hz-65Hz						

Solid State Energy Pulse Output (Selectable - kwn/kvarn)										
Isolation	Optical									
Max. Load Voltage	80V									
Max. Forward Current	50mA									
Pulse Width	30-500ms configurable									
Pulse Constant	1-0xFFFFFFF configurable									
Direct Connected Input	500 imp./kWh (default)									
CT Input	10000 imp./kWh (default)									

Communications RS-485 Modbus RTU Baud Rate 1.2/2.4/4.8/9.6/19.2/38.4 kbps Maximum Wire Size 1.5mm² (16AWG) 0.45 N.m Maximum Torque

Environmental Condit	ions
Operating Temperature	-25°C to +70°C
Storage Temperature	-40°C to +85°C
Humidity	5% to 95% non-condensing
Atmospheric Pressure	70kPa to 106kPa
Pollution Degree	2

Mechanical Characteristics								
Unit Dimensions	72(W)x95(H)x70(D) mm							
Mounting	DIN Rail							
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: 2010
Electrical Safety in Low Voltage Distribution Systems up to 1000Vac and 1500 Vdc	IEC 61557-12: 2021 (PMD)
Products Safety Requirements and Tests NMI AC Voltage Impulse Voltage	IEC 62052-31: 2015 AS 62052.31: 2017 + A1:2021 M13-1 4kV @ 1 minute 6kV, 1.2/50μs

EMC Compatibility EMC 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
Ring Wave	EN 61000-4-12: 2017

Mechanical Tests	
Spring Hammer Test	IEC 62052-31: 2015 & AS 62052.31: 2017 + A1:2021
Vibration Test	IEC 62052-11: 2020 & AS 62052.11: 2023
Shock Test	IEC 62052-11: 2020 & AS 62052.11: 2023

Revenue Metering Approva	1
NMI M13-1 of Australia	Approval Mark: NMI XX/X/XXX

Ordering Information

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 Currente	A								10A (100A), Direct Connected Input		
Input Current~				B	В						1A (10A), CT Input
Input Voltage					3					110-240VLN/190-415VLL (-20% to +15%)	
System Frequenc	y					5					45-65HZ
			Γ	Γ			A				1xSS Pulse Output
I/O~							В			1xDI	
							С				1xSS Pulse Output + 1xDI
Communications A		1xRS-485 Port									
Protocol		Γ	Γ	Γ	Γ				M		Modbus
Display Language	Display Language		English								
PMC-340	-	A 6	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







Appearance and Terminals

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Your Local Representative

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