



Overview

The PMC-230 Single-Phase Multifunction Meter is CET's latest offer for the low voltage energy metering market featuring DIN rail mount, compact construction, 63A direct input with an internal UC2 Disconnect Relay compliant with the Australia National Electricity Rules (NER) schedule 7.5 for the ability to disconnect/re-connect to the supply. The PMC-230 also complies with the IEC 62053-21 Class 1 kWh Accuracy Standard and has received the certificate of approval from the National Measurement Institute (NMI) of Australia for compliance with the M6-1 Electricity Meters, Part 1: Metrological and Technical Requirements. The PMC-230 provides 4MB Log Memory for Data Recording, 3xDI for Status Monitoring or Pulse Counting, 1xLED and 1xSS Pulse Output for energy pulsing. Further, the standard RS485 port supporting Modbus RTU protocol with password protection allows the PMC-230 to become a vital component of an intelligent, multifunction monitoring solution for any secured 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

Ease of use

- Easy to read LCD for both data viewing and configuration
- Two LED indicators for Energy Pulsing and Disconnect Relay status
- Password-protected setup via front panel or free PMC Setup software
- Easy installation with DIN rail mounting, no tools required

Basic Measurements

- IEC 62053-21 Class 1 and NMI M6-1 Certified by UL
- Direct Input up to 63A without external CT
- U, I, P, Q, S, PF, Frequency and Operating Time
- kWh and kvarh Imp./Exp. and kVAh
- Two TOU schedules, each providing
 - 4 Seasons
 - 12 Daily Profiles, each with 8 Periods in 15-minute interval
 - 30 Holidays or Alternate Days
 - 4 Tariffs, each providing kWh/kvarh Imp./Exp., kVAh
- Demands and Peak Demands for U, I and P/Q/S with timestamp for This Month & Last Month (or Since Last Reset & Before Last Reset)
- U and I THD
- DI Counters, Front Panel & Communication Programming Counters

Disconnect Relay (Internal)

- UC2 compliant Disconnect Relay that can be activated locally from the Front Panel or remotely via communications

Energy Pulse Outputs

- 1 LED Energy Pulse Output on the Front Panel
- 1 Solid State Relay Energy Pulse Output

Digital Inputs

- 3 channels for external status monitoring and pulse counting
- Self-excited, internally wetted at 12VDC
- 1000Hz sampling

Data Recorder

- One Data Recorder Log of 16 parameters
- Recording Interval from 1 second to 40 days.
- Configurable Depth (max. 65535) and Recording Offset
- 4MB Log Memory, capable of recording 16 parameters at 5-min interval for 6 months
- Available parameters: U, I, P, Q, S, PF, Freq., kWh Imp./Exp., kvarh Imp./Exp., kVAh, DI Counters, Relay Status, Demands and Peak Demands for U, I, P/Q/S.

Monthly Energy Log

- 12 historical monthly logs of kWh, kvarh Imp./Exp. and kVAh as well as kWh/kvarh Imp./Exp. and kVAh per Tariff

SOE Log

- 32 events time-stamped to ± 1 ms resolution

Communications

- Optically isolated RS485 ports at 1200 to 19,200 bps
- Modbus RTU protocol with configurable password protection

Real-time Clock

- Battery backed RTC @ 6ppm (≤ 0.5 s/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

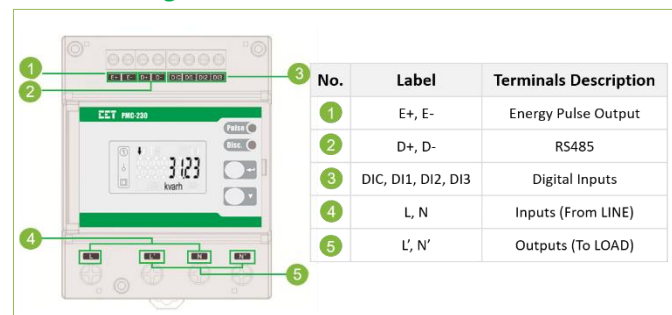
Accuracy

Parameters	Accuracy	Resolution
Voltage	$\pm 0.5\%$	0.1V
Current	$\pm 0.5\%$	0.001A
P, Q, S	$\pm 1.0\%$	0.001kW/kvar/kVA
kWh	IEC 62053-21 Class 1	0.01kWh
kvarh	IEC 62053-23 Class 2	0.01kvarh
PF	$\pm 1.0\%$	0.001
Frequency	± 0.02 Hz	0.01Hz

Front Panel Display



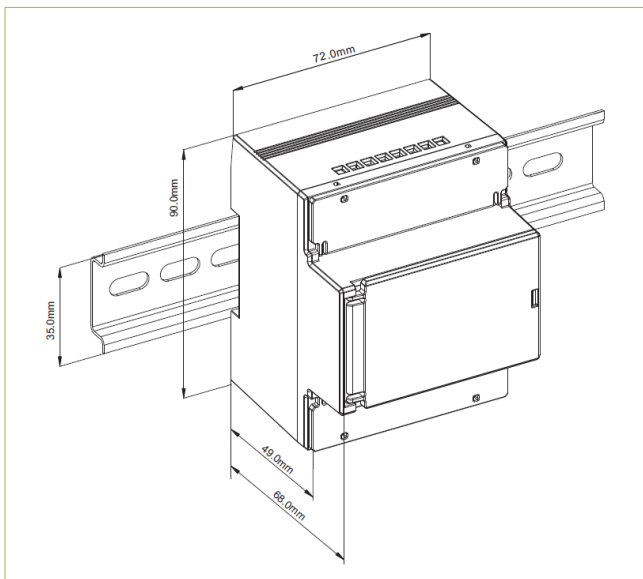
Terminals Diagram



Technical Specifications

Measurement Inputs (L, N, L', N')			
Voltage (Un)	220VAC	230VAC	240VAC
Overrange (% Un)	120%	115%	110%
Range	95-264VAC		
Burden	<3VA		
Current (Ib / Imax)	5A / 63A		
Starting Current	0.4% Ib (20mA)		
Minimum Current	5% Ib (0.25A)		
Burden	<3VA		
Frequency	50Hz/60Hz		
Power Supply	Self-powered from 95 to 264VAC		
Maximum Wire Size	25 mm ² (4AWG)		
Torque for L, N Terminals	2.5 N.m		
Disconnect Relay			
Rated. Load (Resistive)	100A @ 250VAC		
Response Time	20ms		
Max. Short-Circuit Current	2500A @ 10ms		
Service Life (Mech./Elec.)	100k/5k Operations		
Rated Making Capacity @ 1.15Un and PF =1	63A max.		
Rated Breaking Capacity @ 1.15 Un and PF =1	63A max.		
Dielectric (AC Voltage)	4kV @ 1minute (Contact to Coil) 2kV @ 1minute (Contact to Contact)		
Insulation Resistance	1000MΩ/500VDC		
SSR Pulse Output (E+, E-)			
Type	Optically Isolated Solid State Relay		
Max. Load Voltage	80 VDC		
Max. Forward Current	50 mA		
Maximum Wire Size	1.5 mm ² (16AWG)		
Torque for Terminals	0.45 N.m		
Communications (D+, D-)			
RS-485 (Modbus RTU)	Optically isolated @ 5kVrms		
Maximum Wire Size	1.5mm ² (16AWG)		
Torque for RS485 Terminals	0.45 N.m		
Environmental Conditions			
Operating Temp.	-25°C to +70°C		
Storage Temp.	-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)x68(D)x90(H)mm		
Mounting	DIN-Rail Mounting		
IP Rating	IP51 (Front) IP30 (Body)		

Dimensions and Installation



Standards of Compliance

Safety Requirements	
CE LVD 2014/35/EU	EN 61010-1: 2010 EN 61010-2-030: 2010
Electrical safety in low voltage distribution systems up to 1000V _{ac} and 1500 V _{dc}	IEC 61557-12: 2018 (PMD)
Insulation	IEC 62052-11: 2003 IEC 62053-21: 2003 NMI M6-1
AC Voltage	4kV @ 1 minute
Impulse Voltage	12kV+0%, -15%, 1.2/50μs (NMI M6-1)
Electromagnetic Compatibility EMC 2014/30/EU (EN 61326: 2013)	
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
V Dips, Interruptions & Variations	EN 61000-4-11:2004+A1: 2017
Mechanical Tests	
Spring Hammer Test	IEC 62052-11: 2003
Vibration Test	IEC 62052-11: 2003
Shock Test	IEC 62052-11: 2003
Revenue Metering Approval	
NMI M6-1 of Australia	Approval Mark: NMI 14/2/109 UL Ref. # R4789222180_NMI

Ordering Information

Product Code		Description
PMC-230 Single-Phase Multifunction Meter		
Basic Function		4MB Memory, 1xData Recorder, 3xDI, 1xLED Pulse Output, 1xSS Pulse Output, 1xRS485 and an Internal UC2 Compliant Disconnect Relay
Input Current		5A (63A Max.), Direct Input
Input Voltage		95V-240VAC, ±10%
System Frequency		50Hz/60Hz
Communications		1xRS-485
Language		English
PMC-230	- B C 3 5 A E	PMC-230-BC35AE (Standard Model)

Contact us



ECOXPLORE PTE LTD
120 LOWER DELTA ROAD #12-16
CENDEX CENTRE
SINGAPORE 169208
TEL: (65) 6274 4840
FAX: (65) 6274 2939
EMAIL: SALES@ECOXPLORE.COM

www.EcoXPLORE.COM

Revision Date: June 23, 2020

Designed For Reliability

Manufactured To Last