

# Multifunction Energy Meter

For Industrial & Commercial Metering



# Multifunction

# Direct Connection

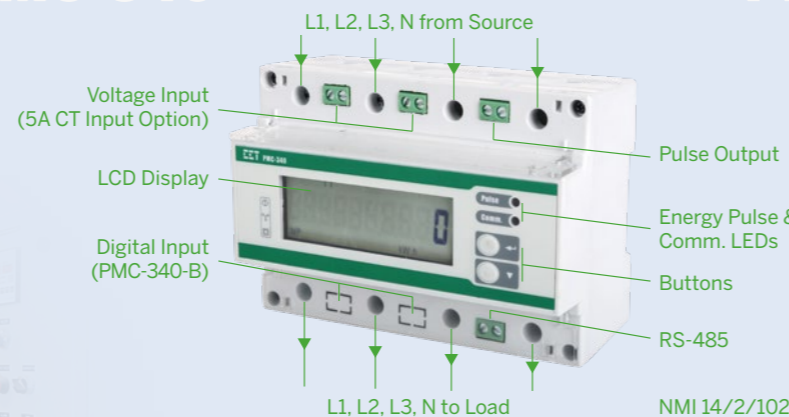
# Energy Meter

# High Accuracy

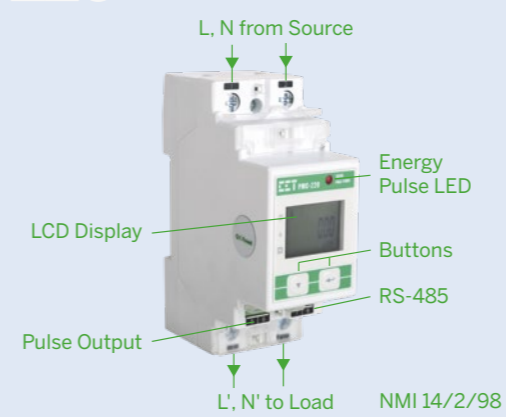
**PMC-340 and PMC-220** are CET's latest offers for the low voltage energy metering market featuring DIN Rail mount, high accuracy, multifunction measurements and a large, easy to read LCD display. The PMC-340 provides 3-Ø multifunction measurements with 100A Direct Input or 5A CT Input and optional Digital Inputs for status monitoring or pulse counting for WAGES information. The PMC-220 is designed for low cost 1-Ø multifunction measurement with Direct Input up to 63A. Both PMC-340 and PMC-220 come standard with an RS-485 port, a front panel LCD as well as a Solid State Relay Output for energy pulsing. In addition, both devices have received the Certificate of Approval from the National Measurement Institute (NMI) of Australia and been verified by UL with reference to NMI M6-1 Electricity Meters, Part 1: Metrological and Technical Requirements.



## PMC-340



## PMC-220

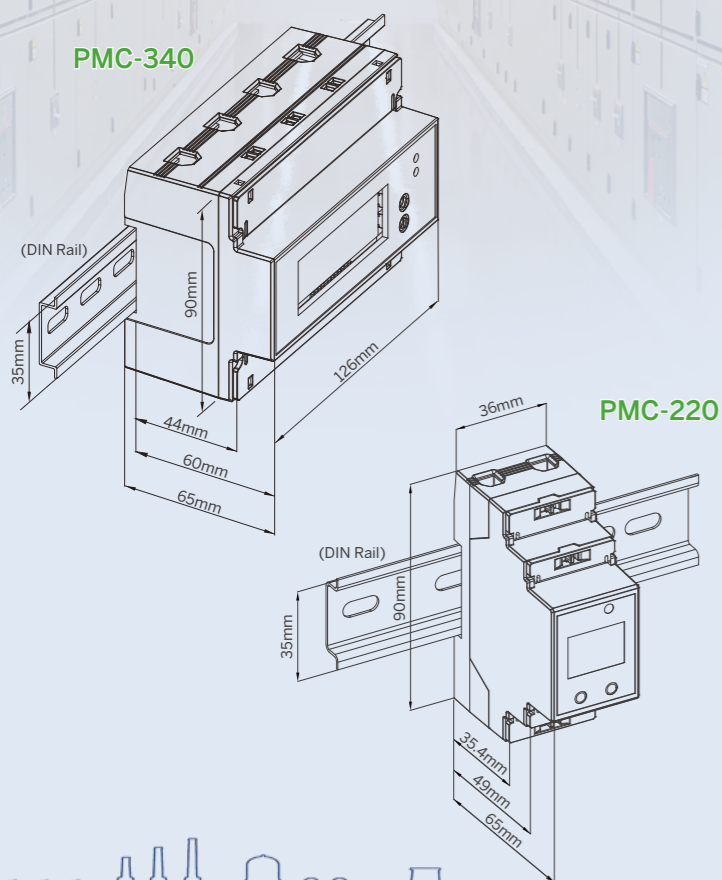


## Typical Applications

- DIN-Rail mount energy metering
- Industrial and commercial metering
- Substation, building and factory automation
- Sub-metering
- Harmonic monitoring (PMC-340)



## Dimension



## Features

	3-Ø PMC-340	1-Ø PMC-220
<b>Meter Type</b>	Three-Phase Multifunction Energy Meter	Single-Phase Multifunction Energy Meter
<b>Dimensions</b>	126x90x65mm	36x90x65mm
<b>Accuracy</b>	IEC62053-21: 2020 Class 0.5 (100A) and IEC62053-22: 2020 Class 0.5S (5A CT)	IEC62053-21: 2020 Class 0.5
<b>Current Input</b>	100A Direct Input and 5A CT Input	63A Direct Input
<b>Power Supply</b>	Self-powered, no external control power required	Self-powered, no external control power required
<b>Display</b>	Large, Easy to read LCD	8-digit Multifunction LCD
<b>LED Indicator</b>	Two LED indicators for energy pulsing and communication status	kWh LED Pulse Output
<b>Solid State O/P</b>	1 Solid State Energy Pulse Output	1 Solid State Energy Pulse Output
<b>Communication</b>	Standard RS-485 port with Modbus RTU support	Standard RS-485 port with Modbus RTU support
<b>Digital Input</b>	3 Optional DIs for status monitoring, pulse counting or tariff switching	/
<b>Access</b>	Password Protected	Password Protected
<b>Integration</b>	Easy integration into other Automation or SCADA systems	Easy integration into other Automation or SCADA systems

## Measurements

	PMC-340	PMC-220
<b>U/I, Power, PF, Freq.</b>	Voltage, Current, kW, kvar, kVA, PF and Frequency	Voltage, Current, kW, kvar, kVA, PF and Frequency
<b>Energy</b>	Per phase and Total kWh and kvarh Imp/Exp/Tot/Net and kVAh	Total kWh and kvarh Imp/Exp/Tot/Net and kVAh
<b>Harmonics</b>	THD, TOHD, TEHD and Individual up to 31 <sup>st</sup>	/
<b>Demand</b>	Ia, Ib, Ic, kW/kvar/kVA Total Demands and Max. Demands	/
<b>Max./Min.</b>	Max./Min. Log	/
<b>Data Recorder</b>	16 measurements @ 10-minute intervals for 197 days	/
<b>TOU</b>	2 TOU Schedules and Monthly Energy Log of kWh/kvarh/kVAh	/
<b>SOE</b>	16 SOE events time-stamped to 1ms resolution	/

## Accuracy

	3-Ø PMC-340		1-Ø PMC-220	
	Accuracy	Resolution	Accuracy	Resolution
<b>Voltage (U)</b>	±0.2%	0.01V	±0.5%	0.1V
<b>Current (I)</b>	±0.2%	0.001A	±0.5%	0.001A
<b>kW, kVA</b>	±0.5%	0.01kX	±1.0%	0.001kX
<b>kvar</b>	±0.5%	0.01kvar	±1.0%	0.001kvar
<b>kWh</b>	IEC62053-21: 2020 Class 0.5 for 100A Direct Input	0.1kXh (PMC-340-A)	IEC62053-21: 2020 Class 0.5 NMI M6-1 Class 1	0.01kXh
<b>kVAh</b>	IEC62053-22: 2020 Class 0.5S for 5A CT Input	0.01kXh (PMC-340-B)	IEC62053-21: 2020 Class 0.5	0.01kVAh
<b>kvarh</b>	IEC62053-23: 2020 Class 2	0.01kvarh	IEC62053-23: 2020 Class 2	0.01kvarh
<b>PF</b>	±1.0%	0.001	±1.0%	0.001
<b>Frequency</b>	±0.02 Hz	0.001Hz	±0.02 Hz	0.01Hz
<b>Harmonics</b>	IEC61000-4-7 Class II	0.1%	/	/

## Technical Specifications

	3-Ø PMC-340	1-Ø PMC-220
<b>Voltage (Un)</b>	220-240VLN	220-240VLN
<b>Overrange (% Un)</b>	110%-120%	110%-120%
<b>Range (V)</b>	168 to 264VAC	95-264VAC
<b>Burden</b>	<10VA/phase	<0.5VA
Current (Ib/Imax)	20A/100A	5A/63A
Range	0.4% Ib to Imax	/
Starting Current (Ist)	0.4% Ib (0.08A)	0.4% Ib (0.02A)
Minimum Current (Imin)	5% Ib (1A)	5% Ib (0.25A)
<b>Direct Input</b>	<4VA/phase	<2VA
Power Supply	Self-powered 168 to 264VAC	Self-powered 95-264VAC
Maximum Wire Size	35mm <sup>2</sup> (3AWG)	25mm <sup>2</sup> (4AWG)
Maximum Torque	2.5 N.m	2.5 N.m
Current (In/Imax)	5A/6A	/
Range	(0.1%-120%) In	/
<b>CT Input</b>	Starting Current (Ist)	0.1% In
Burden	<0.5VA/phase	/
<b>Frequency</b>	45-65Hz	45-65Hz

### SS Pulse Output

<b>Pulse Constant</b>	1/10/100/500*/1000 /3200/5000* imp/kWh (imp/kvarh)	1000 imp/kWh or imp/kvarh
<b>Isolation</b>	Optical	Optical
<b>Max. Load Voltage</b>	80V	80V
<b>Max. Forward Current</b>	50mA	50mA
<b>Pulse Width</b>	60-150ms (PMC-340-A) 30-150ms (PMC-340-B)	60-100ms

\*Available in PMC-340-B with Firmware V1.00.03 and Protocol V1.4 or later

### Communications

<b>RS-485</b>	Modbus RTU	Modbus RTU
<b>Baud Rate</b>	1200/2400/4800/9600/19200 bps	1200/2400/4800/9600/19200 bps
<b>Maximum Wire Size</b>	1.5mm <sup>2</sup> (16AWG)	1.5mm <sup>2</sup> (16AWG)
<b>Maximum Torque</b>	0.45 N.m	0.45 N.m

# Environmental and Mechanical Specifications

## 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

	PMC-340	PMC-220
-	PMC-340	PMC-220
Mounting	DIN Rail	
Unit Dimensions	126x90x65mm	36x90x65mm
Shipping Dimensions	165x140x110mm	120x103x42mm
Shipping Weight	0.68kg	0.18kg
IP Rating	IP51 (Front), IP30 (Body)	

## Mechanical Tests

Vibration Test	IEC62052-11: 2020
Shock Test	IEC62052-11: 2020
Spring Hammer Test	IEC62052-31: 2015

## Revenue Metering Approval

PMC-340	NMI M-6 of Australia	Approval Mark: NMI 14/2/102, UL Ref. # R4787950540-1-DC & R4787950540-2-CT
PMC-220	NMI M6-1 of Australia	Approval Mark: NMI 14/2/98, UL Ref. # R11353641-CETA-NMI M6-1

# EMC Compatibility

## CE EMC Directive 2014/30/EU (EN61326: 2013)

### Immunity Tests

Electrostatic Discharge	EN61000-4-2: 2009
Radiated Fields	EN61000-4-3: 2006+A1: 2008+A2: 2010
Fast Transients	EN61000-4-4: 2012
Surges	EN61000-4-5: 2014+A1: 2017
Conducted Disturbances	EN61000-4-6: 2014
Magnetic Fields	EN61000-4-8: 2010
Voltage Dips and Interruptions	EN61000-4-11: 2004+A1: 2017
Ring Wave	EN61000-4-12: 2017

### Emission Tests

Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	EN55011: 2009+A1: 2010 (CISPR 11)
Limits and Methods of Measurement of Radio Disturbance Characteristics of Information Technology Equipment	EN55022: 2010+AC: 2011 (CISPR 22)
Limits for Harmonic Current Emissions for Equipment with Rated Current ≤ 16A	EN61000-3-2: 2014
Limitation of Voltage Fluctuations and Flicker in Low-Voltage Supply Systems for Equipment with Rated Current ≤ 16A	EN61000-3-3: 2013
Emission Standard for Industrial Environments	EN61000-6-4: 2007+A1: 2011

# Safety Standards

## Safety Requirements

CE LVD 2014/35/EU	EN61010-1: 2010+A1: 2019 EN61010-2-030: 2010
Insulation (Indoor Use)	IEC62052-31: 2015 AS 62052-31: 2017 NMI M6-1 (PMC-340-B, PMC-220)
AC Voltage Impulse Voltage	4kV @ 1 minute 12kV+0%, -15%, 1.2/50µs (NMI M6-1)
Electrical Safety in Low Voltage Distribution Systems up to 1000Vac and 1500Vdc	IEC61557-12: 2018 (PMD)

# Ordering Information

## Product Code

## Description

Product Code	Description
PMC-340	Three-Phase Multifunction Energy Meter
Basic Function	A Basic Model
	B Model A+3xDI+2MB Log Memory
Input Current	A 20A (100A Max.), Direct Input
	B 5A (6A), CT Input
Input Voltage	3 240VLN/415VLL
Frequency	5 45Hz-65Hz
Reserved	X None
Communications	A 1xRS-485
Language	E English
PMC-340	A A 3 5 X A E PMC-340-AA35XAE (Standard Model)

## Product Code

## Description

Product Code	Description
PMC-220	Single-Phase Multifunction Energy Meter
Input Current	C 5A (63A Max.), Direct Input
Input Voltage	3 95V-240V AC±10%
Frequency	5 45Hz-65Hz
Communications	A 1xRS-485
Language	E English
PMC-220	C 3 5 A E PMC-220-C35AE (Standard Model)

\* Additional charges apply

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