PMC-630E

Advanced Multifunction Ethernet Meter



- PQ Monitor with Transient Capture
- WF Recording @ 128 Samples/Cycle
- IEC 62053-22 Class 0.5S Compliant
- 4 Current Inputs
- 2MB Log Memory
- Demands and Peak Demands
- Data and Interval Energy Recording
- Max/Min and SOE Log
- Setpoint Alarms
- RS-485, Ethernet & Gateway
- Large, Bright, Backlit LCD Display with Wide Viewing Angle
- Extensive I/O Capabilities
- Extended Warranty
- Extended Temperature Range
- Industrial Grade Components
- Standard Tropicalization
- Metal Enclosure with No Openings
- IP52 Rated
- DIN 96x96

Designed For Reliability *Manufactured To Last*

PMC-630E
Advanced Multifunction Ethernet Meter



The PMC-630E Advanced Multifunction Ethernet Meter, based on the highly successful PMC-630 series, is CET's latest offer for the low, medium and high voltage power/energy metering market. Housed in an industry-standard DIN form factor measuring only 96mmx96mmx125 mm, the PMC-630E's compact size is perfectly suited for today's space restricting installations and for applications that require Ethernet connectivity. The PMC-630E features 4 current inputs, quality construction with metal enclosure, multifunction and revenue-accurate measurements, transient detection with waveform recording capabilities, and an easy-to-read, back-lit LCD display, capable of displaying 3-phase measurements at once. The meter comes standard with 6 Digital Inputs for status monitoring or utility pulse counting and 3 Digital Outputs for control or alarming applications. The standard SOE Log records all setup changes, DI and Setpoint status changes, and DO operations in 1ms resolution. With the standard RS485 port and 10/100BaseT Ethernet port supporting Modbus RTU and Modbus TCP protocols, the PMC-630E becomes a vital component of an intelligent, multifunction monitoring solution for any Power and Energy Management systems.

Typical Applications

- Class 0.5S Revenue Metering
- Low, medium and high voltage applications
- Utility, industrial and commercial metering
- Substation, building, industrial and factory automation
- Power quality monitoring of main incomer or critical feeder
- Waveform recording
- Extensive data logging with the 2MB on-board memory

Features Summary

Ease of Use

- Large, backlit, easy to read LCD display with wide viewing angle
- Front panel kWh and kvarh LED energy pulse outputs
- Password-protected setup via front panel or free PMC Setup software
- Easy installation with mounting slide bar, no tools required

Basic Measurements

- VLN, VLL, Current per phase and Average
- Neutral Current (I4), measured and calculated
- Voltage and Current phase angles
- kW, kvar, kVA, PF per phase and Total
- Frequency
- kWh, kvarh Import / Export / Total / Net and kVAh
- Bi-directional energy measurements

Sliding Window Demands

- Voltage, Current, Power, PF, Frequency, V and I Unbalance, and THD
- Max/Min values per demand interval
- Peak Demands for This Month and Last Month

Power Quality

- Voltage and Current Unbalance based on Sequence Components
- THD, TOHD, TEHD and K-Factor
- Individual harmonics up to 31st on-board and 63rd via software
- Transient Voltage Detection at 128 samples per cycle

Log Memory

- 2MB on-board memory
- Dynamic memory allocation for Data Recorder Logs

Waveform Recorder Log

- 2 independent groups of waveform recorders with a combined total of 6 entries
- Simultaneous capture of 3-phase Voltage and Current signals
- Programmable format from 128x5, 64x10, 32x20 to 16x40 with up to 5 pre-fault cycles
- Support FIFO recording mode

Data Recorder Log

- 16 Data Recorder Logs of 16 parameters each for real-time measurements, harmonics, interval energy, demand, ….etc
- Recording interval from 1s to 40 days
- Configurable depths and recording offsets

Energy Log

- Interval Energy Recording
- kWh, kvarh Import/Export and kVAh Total
- Recording interval from 5 minutes to 60 minutes
- Configurable Depth and Start Time

SOE Log

- 64 events time-stamped to ±1ms resolution
- Setup changes, Setpoint events and I/O operations

Max/Min Log

- Voltage, Current, Frequency, kW, kvar, kVA, Power Factor, Unbalance, VTHD and ITHD of This Month and Last Month

Setpoints

- 9 user programmable setpoints with extensive list of monitoring parameters
- Configurable thresholds and time delays
- WF Recording, Data Recorder and DO trigger

Digital Inputs

- 6 channels, volts free dry contact, 24VDC internally wetted
- External status monitoring with programmable debounce
- Pulse counting with programmable weight for each channel for collecting WAGES information
- 1000Hz sampling

Relay Outputs

- 3 channels Form A Mechanical relays
- 8A @ 250VAC / 24VDC for DO1
- 5A @ 250VAC / 30VDC for DO2 and DO3

Real-time clock

- 6ppm battery-backed real-time clock (<0.5s per day)

Communications

Ethernet Port

- 10/100BaseT Ethernet with RJ45 connection
- Modbus RTU over TCP/IP and Modbus TCP protocols
- On-board Web Server
- Ethernet Gateway capability

RS485 Port

- Optically isolated
- Baud rate from 1200 to 38400bps
- Modbus RTU protocol

System Integration

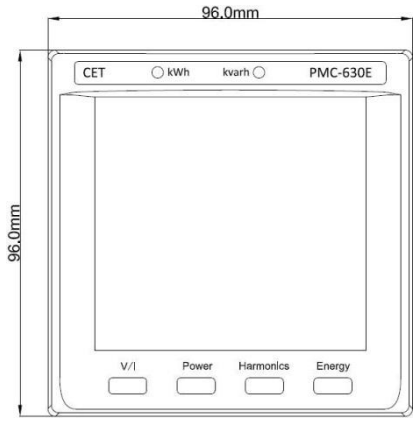
- Supported by our PecStar® iEMS, iEEM and iPQMS
- Easy integration into other Automation or SCADA systems via Modbus RTU and Modbus TCP protocols

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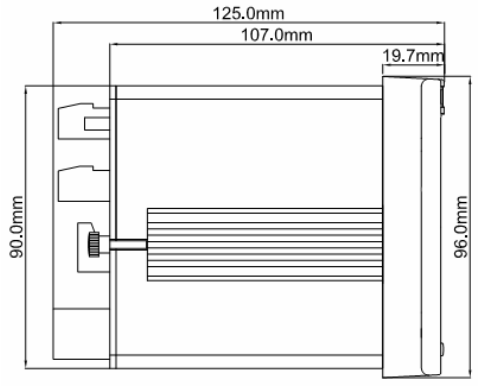
Accuracy

Parameters	Accuracy	Resolution
Voltage	±0.2% reading	0.01V
Current	±0.2% reading + 0.1% F.S.	0.001A
I4 Measured	±0.2% reading + 0.1% F.S.	0.001A
I4 Calculated	0.5% F.S.	0.001A
kW, kVA	IEC 62053-22 Class 0.5S	0.001k
kWh, kVAh	IEC 62053-22 Class 0.5S	0.01kXh
kvar, kvarh	IEC 62053-23 Class 2	0.001k / 0.01kvarh
P.F.	IEC 62053-22 Class 0.5S	0.001
Frequency	±0.02 Hz	0.01Hz
Harmonics	IEC 61000-4-7 Class B	0.01%
K-Factor	IEC 61000-4-7 Class B	0.1
Phase angles	±1°	0.1°

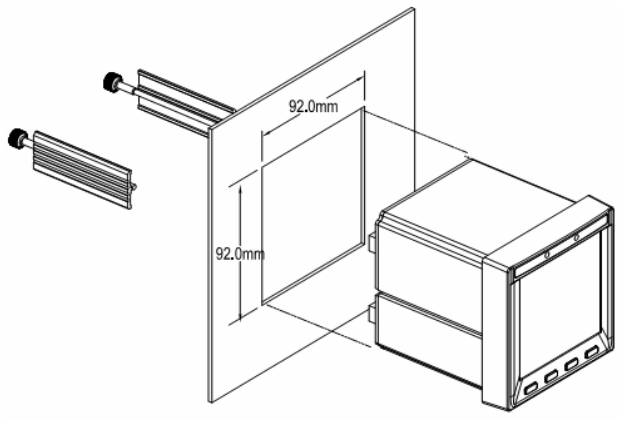
Device View and Dimensions



Front View



Side View



Panel Cutout

Technical Specifications

Voltage Inputs (V1, V2, V3, VN)	
Standard (Un)	240VLN/415VLL
Optional (Un)	69VLN/120VLL, 400VLN/690VLL
Range	10% to 120% Un
PT Ratio	1-10000
Overload	1.2xUn continuous, 2xUn for 10s
Burden	<0.5VA @ 240V
Frequency	45-65Hz
Current Inputs (I11, I12, I21, I22, I31, I32, I41, I42)	
Standard (In/Imax)	5A / 10A
Optional (In/Imax)	1A / 2A
Range	0.1% In to 200% In
CT Ratio	1-6,000 (5A), 1-30,000 (1A)
Overload	2xIn continuous, 20xIn for 1s
Burden	<0.25VA @ 5A
Power Supply (L+, N-)	
Standard	95-415VAC/DC ± 10%, 47-440Hz
Burden	< 6W
Digital Inputs (DI1, DI2, DI3, DI4, DI5, DI6, DIC)	
Type	Dry contact, 24VDC internally wetted
Sampling	1000Hz
Debounce	1-1,000 ms programmable
Digital Outputs (DO11, DO12, DO21, DO22, DO31, DO32)	
Type	Form A Mechanical Relay
Loading	8A@250VAC / 8A@24VDC, 5A@30VDC for DO1 5A@250VAC / 5A@30VDC for DO2 and DO3
Front Panel Pulse Outputs (kWh, kvarh)	
Type	LED
Isolation	Optical
Pulse Constant	1000/3200/5000/6400/12800 imp/kxh
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
Measurement Category	CAT III
Mechanical Characteristics	
Enclosure	Aluminum Alloy
Panel Cutout	92x92mm (3.62''x3.62'')
Unit Dimensions	96x96x125mm (3.78''x3.78''x4.92'')
Shipping Dimensions	170x145x155mm (6.69''x5.71''x6.10'')
Shipping Weight	1.0kg
IP Rating	52

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Standards of Compliance

Safety Requirements		
LVD Directive 2006 / 95 / EC		EN61010-1-1-2001
Insulation		IEC 60255-5-2000
Dielectric test		2kV @ 1 minute
Insulation resistance		>100MΩ
Impulse voltage		5kV, 1.2/50µs
Electromagnetic Compatibility EMC Directive 2004 / 108 / EC (EN 61326: 2006)		
Immunity Tests		
Electrostatic discharge		IEC 61000-4-2: 2008 Level III
Radiated fields		IEC 61000-4-3: 2010 Level III
Fast transients		IEC 61000-4-4: 2011 Level IV
Surges		IEC 61000-4-5: 2005 Level II
Conducted disturbances		IEC 61000-4-6: 2008 Level II
Magnetic Fields		IEC 61000-4-8: 2009 Level IV
Voltage Dips and Interruptions		IEC 61000-4-11: 2004 Class III
Oscillatory waves		IEC 61000-4-12: 2006 Level III
Emission Tests		
Limits and methods of measurement of electromagnetic disturbance characteristics of industrial, scientific and medical (ISM) radio-frequency equipment		EN 55011: 2009 (CISPR 11) + A1: 2011
Limits and methods of measurement of radio disturbance characteristics of information technology equipment		EN 55022: 2010 (CISPR 22)
Limits for harmonic current emissions for equipment with rated current ≤16 A		EN 61000-3-2: 2006 + A1: 2009 + A2: 2009
Limitation of voltage fluctuations and flicker in low-voltage supply systems for equipment with rated current ≤16 A		EN 61000-3-3: 2008
Emission standard for residential, commercial and light-industrial environments		EN 61000-6-3: 2007
Electromagnetic Emission Tests for Measuring Relays and Protection Equipment		IEC 60255-25: 2000
Mechanical Tests		
Vibration Test	Response	IEC 60255-21-1:1998 Level I
	Endurance	IEC 60255-21-1:1998 Level I
Shock Test	Response	IEC 60255-21-2:1998 Level I
	Endurance	IEC 60255-21-2:1998 Level I
Bump Test		IEC 60255-21-2:1998 Level I

Ordering Information

Product Code	Description
PMC-630E Advanced Multifunction Ethernet Meter	
Basic Function	Class 0.5S Compliant, 3-Phase Metering, Demands, Peak Demands, Min/Max Log, 9 Setpoints, Ind. Har to 31st, 16 Data Recorders and WF Recording and 2MB Log Memory
Display Screen	
A	Integrated LCD Screen
Input Current (I1, I2, I3, I4)	
5	5A
1	1A
Input Voltage (V1, V2, V3)	
1	69V/120V
3	240V/415V
9*	400V/690V
Power Supply	
2	95-415VAC/DC, 47-440Hz
System Frequency	
5	50Hz
6	60Hz
DI/DO	
A	6 DI + 3 RO
AI / AO	
X	None
Communications	
D	1 10/100BaseT Ethernet port + 1 RS-485 port
Display Language	
E	English

PMC-630E - A 5 3 2 5 A X D E — PMC-630E-A5325AXDE (Standard Model)

* Additional charges apply

Contact us

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