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Technology

iMeter 8
Advanced Power Quality Analyzer

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LISTED

- True RMS @ 1024 Samples/Cycle
- IEC 62053-22 Class 0.2S Compliant
- IEC 61000-4-30 Ed. 3.1 Class A Certified
- IEC 61000-4-15 Flickermeter
- PQ Disturbance Detection
- Disturbance Waveform Recording
- Comprehensive SDR and Energy Logs
- Dual Ethernet and 2xRS-485
- Modbus RTU/TCP, HTTPS, SNTP, SMTPS
- Extended Temperature Range
- Extended Warranty
- 7” TFT Color Dot-Matrix LCD Display
- 32GB Log Memory
- EN50160 & IEEE Std 519-2022 Report
- IEC 61000-4-7 Harmonics/Interharmonics
- ½ cycle RMS Recorder
- WF Recording in COMTRADE format
- 2kHz - 150kHz C. E. Measurements
- IEC 61850 Support
- Optional Split-Core Current Probes
- Industrial Grade Components
- Standard Tropicalization

Designed For Reliability *Manufactured To Last*

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The iMeter 8 is CET's Advanced PQ Analyzer designed for the compliance monitoring market as it offers un-surpassed functionality by combining Class 0.2S accuracy and advanced PQ features in a 192x192x182.4mm housing with a High-Resolution, Color Dot-Matrix LCD display. The iMeter 8 complies with such standards as IEC 62053-22 Class 0.2S, IEC 61000-4-30 Ed. 3.1 Class A, IEC 61000-4-15, IEC 61000-4-7, EN50160, IEEE Std 519-2022 as well as IEC 61850 for Substation Automation. Further, it offers a large logging capacity with 32GB of on-board memory, extensive I/O, multiple Time Sync. methods, 2x10Base-T/100Base-TX Ethernet and 2xRS-485 ports. In addition, it optionally provides 2xAO and 2xAI for different applications. These features likely make the iMeter 8 one of the most advanced PQ Analyzer for an intelligent Power Quality Monitoring System.

Typical Applications

- PQ monitoring at HV, MV and LV Utility Substations
- Data Centers, Semiconductor Fabs, Heavy Industries
- 7x24 Automated Manufacturing Facilities
- Dips, Swells, Interruptions, Transients, Flickers and Harmonics Monitoring
- Mains and Critical Feeder Monitoring
- IEC 61850 support for Substation Automation and Smart Grid
- Retrofit applications with Split-Core Current Probe (SCCP)

Basic Features

- IEC 62053-22 Class 0.2S kWh metering with Multi-Tariff TOU
- True RMS @ 1024 samples/cycle sampling
- 32GB on-board log memory
- 7'' High-Resolution Color Dot-Matrix Display @ 800x480
- Time Sync. via SNTP, IEEE 1588 (PTP), IRIG-B or GPS 1PPS output
- 256 Standard Setpoints and 16 High-Speed Setpoints
- Dual Base-T/100Base-TX Ethernet and two RS-485 ports

Power Quality Features

- IEC 61000-4-30 Ed. 3.1 Class A Certified
- IEC 61000-4-15, IEC 61000-4-7 Compliance
- EN50160 and IEEE Std 519-2022 Reporting
- 2kHz to 150kHz Conducted Emission Measurements
- Disturbance Direction Indicator
- Disturbance Waveform Recording and RMS Recording
- Fault Capture up to 2,000V peak to peak
- Waveform Recording in COMTRADE and PQDIF file format (Compatible with the PQ View software)

Front Panel Display and Web Interface

- True RMS Real-time, Harmonics, Power and Energy Measurements
- Demands and Multi-Tariff TOU
- Max. & Min. Logs
- Sequence & Unbalance
- Real-time WF Capture of 3-phase Voltages and Currents
- Event Waveforms, RMS Recording and ITIC/SEMI F47 Curves
- Harmonics & Interharmonics Histogram and Phasor Diagrams
- Device and SOE Logs, PQ Counters, Audit Logs and I/O Status
- Device Configuration and Diagnostics

Power Quality Metering

PQ Parameters as per IEC 61000-4-30 Ed. 3.1 Class A Certified

- Power Frequency
- Magnitude of the Supply Voltage and Current
- Flicker
- Supply Voltage Dips, Swells and Interruptions
- Supply Voltage Unbalance and Current Unbalance
- Mains Signaling Voltage on the Supply Voltage
- Rapid Voltage Changes
- Measurement of Over Deviation and Under Deviation Parameters
- Harmonics and Interharmonics for Voltage and Current
- 2kHz to 150kHz Conducted Emission Measurements

Harmonic and Interharmonic Measurements

- K-Factor for Current, Crest Factor for Current and Voltage
- U and I THD, TOHD, TEHD, TIHD, TOIHD, TEIHD and TH (RMS)
- U and I Individual Harmonics (%HD and RMS) from 2nd to 63rd #
- U and I Individual Interharmonics (%IHD and RMS) from 1st to 63rd #
- Total Harmonic P, Q, S and PF
- Harmonic P, Q, S and PF from 2nd to 63rd in RMS
- Harmonic Phase Angle from 2nd to 63rd #
- U and I DC Components
- Total Harmonic kWh, kvarh Import/Export/Net/Total
- Total Harmonic kWh, kvarh Import/Export from 2nd to 63rd

%HD and %IHD can be configured as % of Fundamental, % of U/I nominal or % of RMS

Conducted Emissions in the 2kHz to 150kHz Range

- Real-time amplitude (150/180-Cycle) and the Max., Min., Avg. and CP95 (in 1-minute interval) for a total of 106 frequency segments for the 2kHz-9kHz (U_{rms} and I_{rms}) and 9kHz -150kHz (U_{rms}) range
- Daily Heat Map display on the Web Interface for the Max., Min., Avg. and 95th percentile values

Sequence and Unbalance

- Zero, Positive and Negative Sequence Components
- U and I Unbalance based on Zero and Negative Sequence Components

Dips, Swells, Interruptions Recording

- Dips, Swells & Interruptions detection @ 10ms (½ cycle at 50Hz)
- Trigger for DO, SOE Log, DR, WFR, DWR, RMSR, iTrigger and Alarm Email
- Display of Event specific WFR, DWR and/or RMSR as well as the associated ITIC/SEMI F47 plot on the Front Panel and Web Interface
- ITIC/SEMI F47 Alarm trigger for DO and iTrigger upon the detection of Dips, Swells and Interruptions that are outside of the respective tolerance curves

Transients Recording

- Transients capture as short as 20us @ 50Hz or 16.67us @ 60Hz at 1024 samples for sub-cycle disturbance such as capacitor switching and resonance phenomena
- Display of Event specific WFR, DWR and/or RMSR on the Front Panel and Web Interface

Rapid Voltage Changes (RVC)

- Detection of a quick transition in RMS voltage between two steady-state Voltage conditions

Inrush Current Monitoring

- Monitoring of the ½ cycle RMS Current and capturing of the Current waveforms associated with events such as motor starting and transformer being energized

Disturbance Direction Indicator

- Determine if a Dip/Swell/Interruption Event is located upstream or downstream
- Pinpoint if the cause of the event is external or internal

PQ Event Counters

- Dips, Swells, Interruptions, Transients, Rapid Voltage Changes, Inrush Current, Mains Signalling Voltages and Total PQ Event Counters

Metering

Basic Measurements (1-second update)

- 3-phase U, I, P, Q, S and PF as well as U4, I4 and I5
- kWh, kvarh Import/Export/Net/Total and kVAh Total
- Frequency

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High-Speed Measurements
- 3-phase U, I, P, Q, S and PF as well as U4, I4 and I5 @ ½ cycle
- Frequency @ 1 cycle

Demands
- Present and Predicted Demand for 3-phase U, I, P, Q, S and PF as well as U4, I4, I5, Frequency
- Present Demand of 4-phase U & I THD/TOHD/TEHD, 4-phase Current K-Factor, U2/U0 & I2/I0 Unbalance, Over & Under Deviation of Voltage and Frequency, 4-phase Fundamental Current
- Max./Min. values per Demand Interval
- Maximum Demands for This Month & Last Month (or Since Last Reset & Before Last Reset)
- Demand Synchronization with DI

Multi-Tariff TOU capability
- Two independent sets of TOU Schedules, each supporting
  - Up to 12 Seasons
  - 90 Holidays or Alternate Days and 3 Weekdays
  - 20 Daily Profiles, each with 12 Periods in 15-minute interval
  - 8 Tariffs, each providing the following information:
    - kWh/kvarh Import/Export and kVAh
    - P & Q Import/Export Maximum Demands with timestamp
    - Register rollover at 100,000,000,000.000 or 1,000,000,000.000 kXh
- Switching between two TOU schedules manually or according to pre-programmed time
- 12 Historical Logs for Energy and Maximum Demand

Data and Event Recorders

Non-Volatile Log Memory
- 32GB on-board non-volatile Log Memory

Data Recorder (DR)
- 8 DR Logs capable of recording up to 64 parameters each
- Recording Interval from 1s to 40 days
- Programmable sources such as RMS/Fundamental/Harmonic/Interharmonic Measurements, Demands, Deviations, MSV, Unbalances and Flicker
- Configurable Recording Offset
- Support FIFO or Stop-When-Full recording modes

Statistical Data Recorder (SDR)
- 16 SDR Logs of maximum 64 parameters each
- Recording of the Max., Min., Avg. and CP95 for Real-time Measurements including U, I, P, Q, S, PF, Freq., Power, PF, Harmonics, Deviations and Unbalances
- Recording interval from 0 minute to 60 minutes
- 30 days @ 1-minute, 300 days @ 10-minute, 450-day @ 15-minute
- PQDIF file format, downloadable from the on-board FTP Server
- Support FIFO or Stop-When-Full mode

Interval Energy Recorder (IER) and Accumulative Energy Recorder (AER)
- Both IER and AER support recording of Total RMS kWh, kvarh Import/Export/Total/Net and kVAh, Total Fundamental and Total Harmonic kWh, kvarh Import/Export
- Recording interval from 1 minute to 65535 minutes
- Maximum Recording Depth @ 65535 records
- Support FIFO and Stop-When-Full modes

Max./Min. Recorder (MMR)
- 4 Max./Min. Recorders of 20 parameters each
- RMS/Fundamental/Harmonic/Interharmonic Measurements, Demands, Deviations, Unbalances and Flicker
- Two transfer modes:
  - Manual: Max./Min. Since Last Reset & Before Last Reset
  - Auto: Max./Min. of This Month & Last Month

Disturbance Waveform Recorder (DWR)
- 128 entries
- Simultaneous recording of all Voltage (U1-U4) and Current (I1-I4) Inputs
  - Initial Fault: 35 cycles @ 512 samples/cycle
  - Extended Fault: Up to 150 cycles @ 16 samples/cycle
  - Steady State: Up to 360s of 1-cycle absolute peak values
  - Post Fault: 15 cycles @ 512 samples/cycle

Real-Time Waveform Capture (WFC) and Waveform Recorder (WFR)
- Real-time WFC @ 128 samples/cycle x 4 cycles via Front Panel and Web Interface
- WFR with maximum 128 entries
- Simultaneous capture of 4-phase Voltage and Current Inputs
- No. of Cycles x Samples/Cycles with programmable pre-fault cycles: (40-400) x 1024, (40-800) x 512, (40-1600) x 256, (40-3200) x 128
- Scheduled WFR with maximum repetition of 10,000 times and programmable schedule from 1 to 1440 mins
- COMTRADE file format, downloadable from the on-board Web Server or FTP Server

RMS Recorder (RMSR)
- 128 entries
- 16 parameters max., selectable U, I, P, Q, S, PF, Freq., Freq. Deviation
- Recording Interval from 0.5 to 60 cycles
- Recording Depth @ 7200 samples per parameter
- Configurable pre-fault samples from 100 to 500
- 72 seconds of ½ cycle RMS Recording @ 50Hz or 60 seconds @ 60Hz
- Display of U & I RMSR triggered by events on the Web Interface

iTrigger
- Cross trigger DO, SOE Log, WFR, DWR, RMSR and Alarm Email with other iMeter devices within the same local area network (LAN)
- Programmable via Web Interface or Communications

SOE Log
- 1024 FIFO events time-stamped to ±1ms resolution
- Setpoint events, I/O operations, Dips, Swells, Interruptions, Transients, Rapid Voltage Changes, Inrush Current, Mains Signaling Voltages, Motor Start, iTrigger, etc.
- Record the time and characteristic data for Setpoints and PQ events

Device Log
- 1024 FIFO entries time-stamped to ±1ms resolution
- Power On/Off Records, Setup changes, Time Sync., Device Operations and Self-diagnostics

Audit Logs
- Display of Log In/Out events, View/Export/Clear Audit Logs on the Web Interface for Auditor Account
- Store up to 2048 Audit Logs in non-volatile memory
- Support FIFO or Stop-When-Full recording modes

IEEE Std 519-2022 Report
- 365 Daily Reports for statistical evaluations on Voltage and Current Harmonics based on 99th percentile very short time (3s) values
- 52 Weekly Reports for statistical evaluations on Voltage Harmonics (95th percentile) and Current Harmonics (95th and 99th percentile) short time (10 min) values
- Configurable Report Mode, PCC Voltage, Max. Short Circuit Current, etc.

Setpoints

PQ Setpoints
- Transients
- Dips, Swells, Interruptions, ITIC Alarm and SEMI F47 Alarm
- Rapid Voltage Changes
- Inrush Current
- Trigger DO, DR, SOE Log, WFR, DWR, RMSR, iTrigger and Alarm Email

Control Setpoints
- 256 standard and 16 High-Speed Setpoints
- Extensive monitoring sources including U, I, P, Q, S, Demand, Harmonics, Unbalances, Deviations, Flickers, Phase Reversal/Loss, AI, etc.
- Configurable thresholds and time delays
- Trigger DO, DR, SOE Log, WFR, DWR, RMSR, iTrigger and Alarm Email

Motor Start Setpoints
- Monitoring motor startup procedure with recording of Maximum Starting Current, Minimum Voltage and Duration
- Trigger DO, SOE Log, WFR, DWR, RMSR, iTrigger and Alarm Email

Digital Input Setpoints
- Provides control output actions in response to changes in Digital Input status
- Trigger DO, DR, SOE Log, WFR, DWR, RMSR, iTrigger and Alarm Email

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Inputs and Outputs

Digital Inputs

- Standard 8 or optional 16 channels
- Standard volt free dry contact with 24VDC Internal Excitation~
- Optional 110VAC/DC or 220VAC/DC External Excitation
- 1000Hz sampling for external status monitoring with programmable debounce
- Pulse counting with programmable weight for each channel for collecting WAGES (Water, Air, Gas, Electricity, Steam) information
- Demand Synchronization and Tariff Switch based on DI Status

~ UL Certified

Digital Outputs

- Standard 3 or optional 7 channels Form A and 1 channel Form C Mechanical Relays for general purpose control or alarming
- Optional 2 or 4 SS Relays for Energy pulsing applications

Analog Inputs (Optional)

- Two channels 0/4-20mA DC input with programmable zero and full scales that can be used to measure external transducer signal

Analog Output (Optional)

- One or two channels 0/4-20mA DC output with programmable zero and full scales

Communications

Ethernet Ports (P1, P2)

- Dual Base-T/100Base-TX Ethernet Ports with RJ45 connector
- Protocols supported: Modbus RTU/TCP, HTTPS, SNTP, SMTP/SMTPS, FTP and IEC 61850
- Built-in password protected Web Server with multiple user accounts and pre-defined roles for easy data viewing, setup configuration and firmware upgrade
- Simultaneous client connections for 12xModbus TCP & 12xIEC 61850

RS-485 (P3, P4)

- Dual optically isolated RS-485 port with baud rate from 1.2 to 38.4 kbps
- Support Modbus RTU and Ethernet Gateway

Time Synchronization

- Battery-backed Real-time clock @ 6ppm (≤ 0.5s/day)
- Time Sync. via Modbus RTU/TCP, SNTP, IEEE 1588 (PTP)
- Optional GPS/IRIG-B Input

System Integration

PecStar® iEMS

- Supported by CET's PecStar® iEMS
- Can be easily integrated into other 3rd party systems because of its support of multiple communications ports as well as different industry standard protocols such as Modbus and IEC 61850

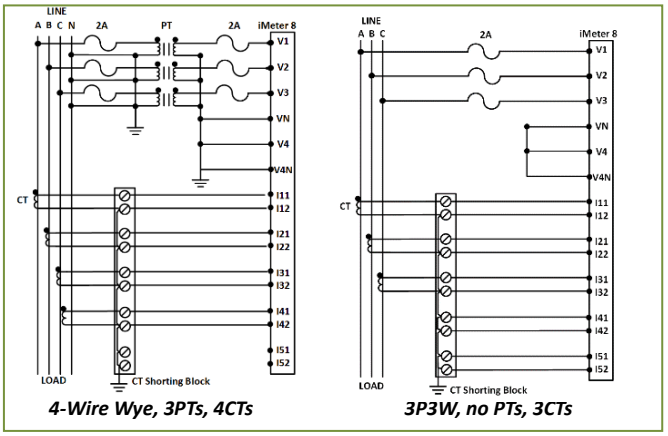
iPQ Explore

- Compact, password protected free software for simultaneous connection with multiple iMeter series Analyzers
- Support configurations for all Setup parameters
- Display of Real-time Measurements, PQ Events and Waveforms
- Export of IER, AER, DR and SDR Logs as well as EN 50160 and IEEE Std 519-2022 Reports

3rd Party System Integration

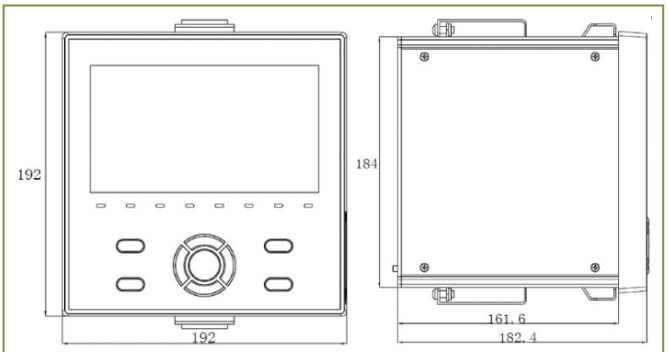
- Easy integration into Substation Automation or Utility SCADA systems via Modbus RTU, Modbus TCP or IEC 61850
- The on-board, password-protected Web Server provides user-friendly access to its data and supports the configuration for most Setup parameters via a web browser without the use of proprietary software
- The on-board, password protected FTP Server allows Excel files for the logged C.E. Measurement data, IEEE Std 519-2022 Daily and Weekly reports and waveform records in COMTRADE format as well as PQDIF files to be downloaded without any special software. The downloaded files can be subsequently viewed using software that supports the industry standard PQDIF and COMTRADE file formats

Typical Wiring Diagrams

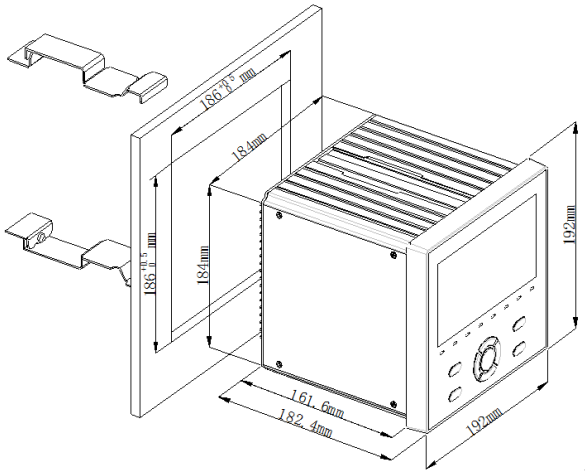


4-Wire Wye, 3PTs, 4CTs *3P3W, no PTs, 3CTs*

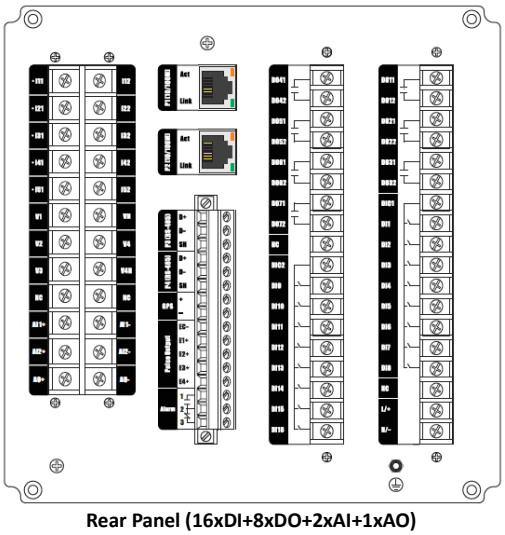
Device Views and Mounting Diagram



Front View **Side View**



Installation



Rear Panel (16xDI+8xDO+2xAI+1xAO)

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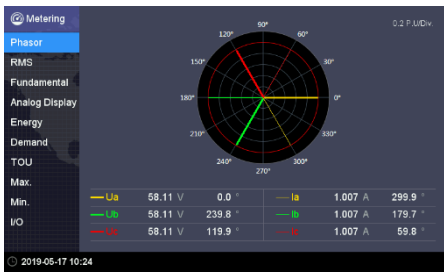
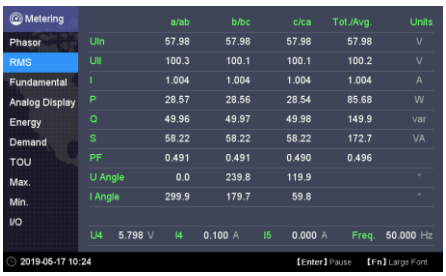
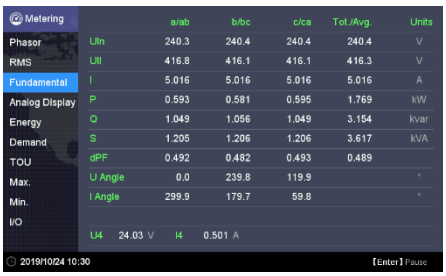
Front Panel User Interfaces



Phasor Diagram



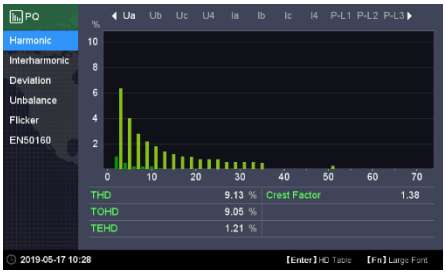
RMS



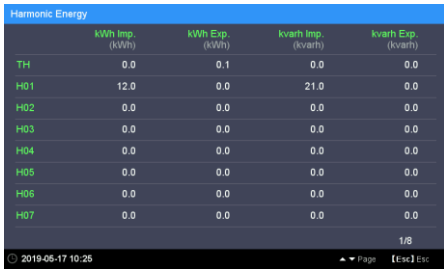
Fundamental Measurement

Energy Display

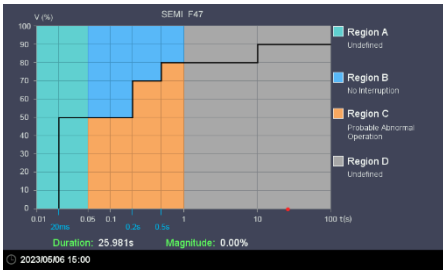
Large Character TOU Energy Display



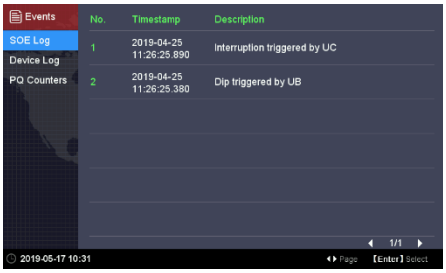
Harmonics



Harmonic Energy Measurements



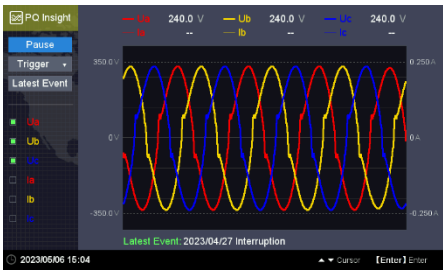
SEMI F47 Plot



Events

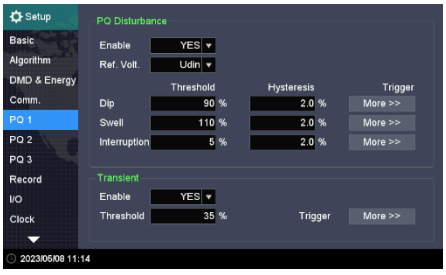
Deviation

EN 50160 Report

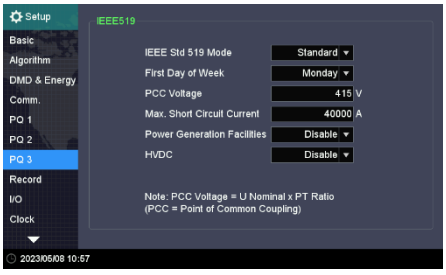


Real-Time WF Capture

Record Setup



PQ 1 Setup



IEEE Std 519-2022 Report Setup

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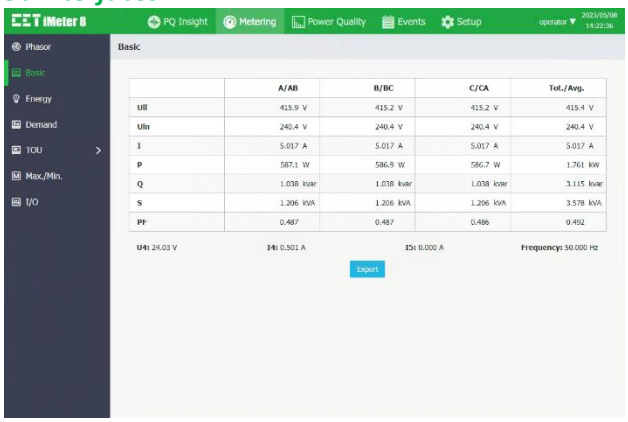
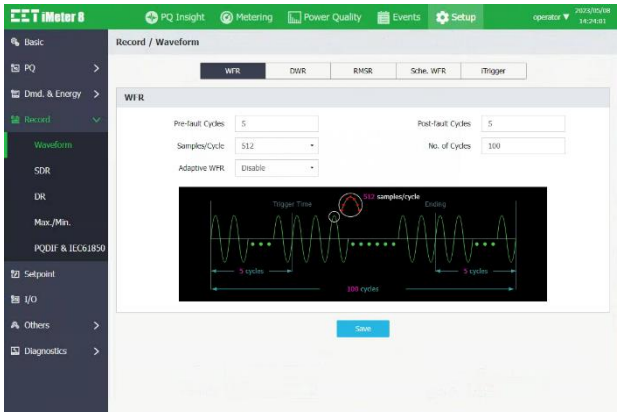
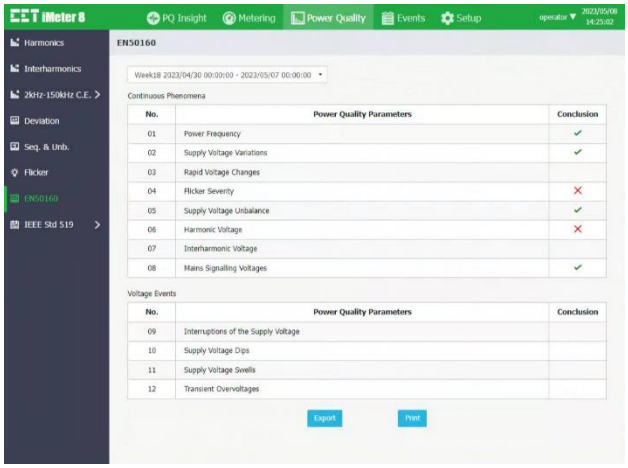
Web Interfaces



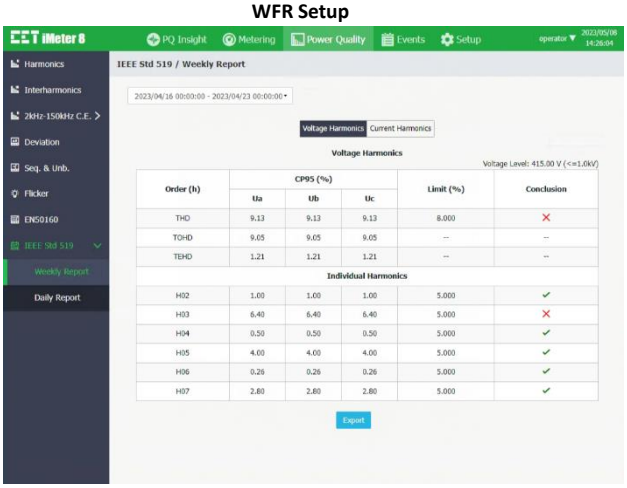
Basic Measurements



WFR Setup

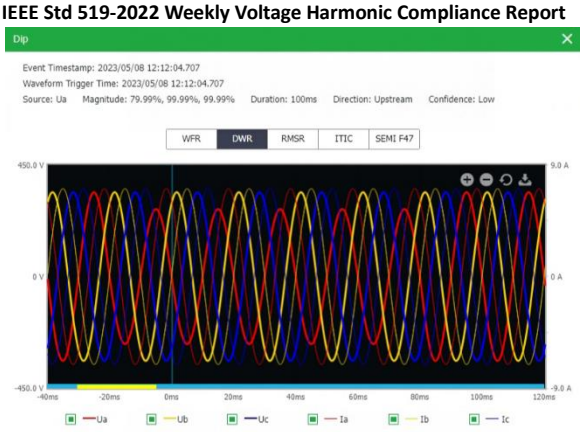


EN 50160 Report

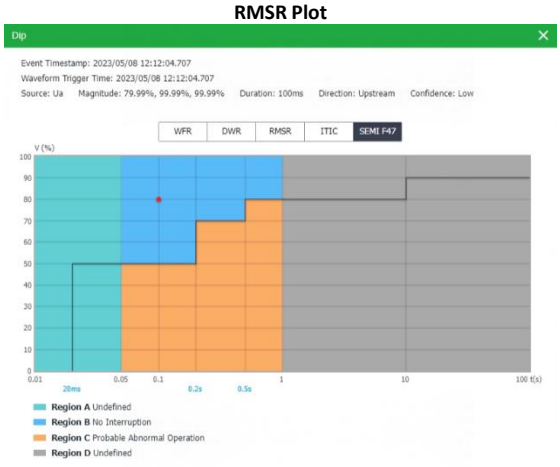


IEEE Std 519-2022 Weekly Voltage Harmonic Compliance Report

RMSR Plot



Disturbance Waveform



SEMI F47 Plot

ITIC Plot

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Technical Specifications

Voltage Inputs (V1, V2, V3, VN, V4, V4N)	
Standard (Un)	400VLN/690VLL +20%
Range	1% to 200% Un for 400VLN nominal
Overload	2xUn continuous, 4xUn for 1s
Burden	< 0.5VA/per phase
PT Ratio	
Primary	1-1,000,000V
Secondary	1-1,500V
V4 Primary	1-1,000,000V
V4 Secondary	1-1,500V
Measurement Category	CAT III 1000V
Frequency	40Hz-60Hz @ 50Hz, 48Hz-72Hz @ 60Hz
Current Inputs (I11, I12, I21, I22, I31, I32, I41, I42, I51, I52)	
Standard (In)	5A (Standard), 1A (Optional)
Range	1% to 400% In
Starting Current	0.1% In
Overload	4xIn continuous, 20xIn for 1s
Burden	< 0.5VA/per phase @ 5A < 0.1VA/per phase @ 1A
Optional SCCP Options	Split-Core Current Probe Input @ 500mV
SCCP-50A-500mV	5A/50A (In/Imax), max. 500mV Output
SCCP-200A-200mV	20A/200A (In/Imax), max. 200mV Output
SCCP-500A-500mV	500A Imax, max. 500mV Output
SCCP-5000A-500mV	Selectable 500A/5000A (Imax) Rogowski Coil, max. 500mV Output
CT Ratio	
Primary	1-30,000A
Secondary	1-50A
I4 Primary	1-30,000A
I4 Secondary	1-50A
Power Supply (L/+, N/-)	
Standard	95-250VAC/VDC ± 10%, 47-440 Hz, OVC III 300V
Optional	20-60VDC, OVC III 150V
Burden	< 12W
Digital Inputs (DIC, DI1 to DI8 or DI16)	
Standard (UL Certified)	Dry contact, 24VDC internally wetted
Optional	110V/220V AC/DC externally wetted
Sampling	1000Hz
Hysteresis	1ms minimum
Form A Relay Outputs (DO1 to DO3 or optional DO1 to DO7)	
Type	Form A Mechanical Relay
Loading	5A @ 250VAC / 30VDC
Form C Relay Output (Alarm 1, 2, 3)	
Type	Form C Mechanical Relay
Loading	8A @ 250VAC / 24VDC
Pulse Outputs (E1+, E1-, E2+, E2-, E3+, E3-, E4+, E4-)	
Type	Form A Solid State Relay
Isolation	Optical
Max. Load Voltage	30VDC
Max. Forward Current	4mA
Optional Analog Inputs (AI1+, AI1-, AI2+, AI2-)	
Type	0-20 / 4-20 mA DC
Overload	24 mA maximum
Optional Analog Outputs (AO1+, AO1-, AO2+, AO2-)	
Type	0-20 / 4-20 mA
Loading	500Ω maximum
Overload	24 mA maximum
Environmental Conditions	
Operating Temperature	-25°C to 70°C
Storage Temperature	-40°C to 85°C
Humidity	5% to 95% non-condensing
Atmospheric Pressure	70 kPa to 110 kPa
Pollution Degree	2
Mechanical Characteristics	
Panel Cutout	186x186 mm
Unit Dimensions	192x192x182.4 mm
IP Rating	IP52

Standards of Compliance

Safety Requirements	
CE LVD 2014 / 35 / EU	EN 61010-1: 2010 + A1: 2019 EN IEC 61010-2-030: 2021 + A11: 2021
cULus Listed CB Test	UL 61010-1, Ed.3, Rev 06/06/2023 IEC 61010-1: 2010, IEC 61010-1: 2010/AMD1: 2016, IEC 61010-2-030: 2017
Electrical Safety in Low Voltage Distribution Systems up to 1000Vac and 1500 Vdc	IEC 61557-12: 2021 (PMD)
Insulation AC Voltage: 2kV @ 1 minute Insulation Resistance: >100MΩ Impulse Voltage: 6kV, 1.2/50µs	IEC 62052-11: 2003 IEC 62053-22: 2003 EN 61010-1: 2010 + A1: 2019
EMC Compatibility CE EMC Directive 2014 / 30 / EU (EN IEC 61326: 2021)	
Immunity (EN50082-2)	
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 and Interruptions	EN 61000-4-11: 2020
Ring Wave	EN 61000-4-12: 2017
Immunity Standard for Industrial Environments	EN IEC 61000-6-2: 2019
Emission (EN50081-2)	
Limits and Methods of Measurement of Electromagnetic Disturbance Characteristics of Industrial, Scientific and Medical (ISM) Radio-Frequency Equipment	EN 55011: 2016 + A1: 2017 + A2: 2021
Electromagnetic Compatibility of Multimedia Equipment - Emission Requirements	EN 55032: 2015 + AC: 2016 + A11: 2020
Limits for Harmonic Current Emissions for Equipment with Rated Current ≤16 A	EN IEC 61000-3-2: 2019
Limitation of Voltage Fluctuations and Flicker in Low-Voltage Supply Systems for Equipment with Rated Current ≤16 A	IEC 61000-3-3: 2013 + AMD1: 2017 EN 61000-3-3: 2013 + AMD1: 2019
Emission Standard for Industrial Environments	EN IEC 61000-6-4: 2019
Radiated Emissions	FCC 47 CFR Part 15, Subpart B ANSI C63.4: 2014
Conducted Emissions	
Limits and Methods of Measurement of Radio Frequency Emissions, as well as Administrative Requirements for ITE, including Digital Apparatus.	ICES-003 Issue 7
Mechanical Tests	
Spring Hammer Test	IEC 62052-11: 2003
Vibration Test	IEC 62052-11: 2003
Shock Test	IEC 62052-11: 2003
Power Quality	
Voltage Characteristics of Electricity Supplied by Public Distribution Systems	EN 50160: 2010
General Guide on Harmonic and Interharmonic Measurements and Instrumentation, for Power Supply Systems and Equipment Connected Thereto	IEC 61000-4-7: 2009
Flicker Meter - Functional and Design Specifications	IEC 61000-4-15: 2010
Testing and Measurement Techniques - Power Quality Measurement Methods	IEC 61000-4-30: 2021 Ed. 3.1 Class A Certified
Power Quality Measurement in Power Supply Systems-Part 2: Functional Tests and Uncertainty Requirements	IEC 62586-2: 2021 Ed.2.1
Harmonic Control in Electrical Power systems	IEEE Std 519-2022

Designed For Reliability *Manufactured To Last*

CET Electric Technology

iMeter 8
Advanced Power Quality Analyzer

Accuracy

Parameters	Accuracy	Resolution
Voltage (U)	±0.1%	0.001V
I1, I2, I3	±0.1%	0.001A
	SCCPA Option: ±0.1% + Error of SCCP	
I4	±0.1%	
I5	±0.5%	
P, Q, S	±0.2%	0.001kX
	SCCPA Option: ±0.5%	
kWh, kVAh	IEC 62053-22 Class 0.2S	0.1kXh
	SCCPA Option: IEC 62053-22 Class 0.5	
kvarh	IEC 62053-24 Class 0.5S IEC 62053-23 Class 2	0.1kvarh
	SCCPA Option: IEC 62053-24 Class 1	
PF	±0.2%	0.001
	SCCPA Option: ±0.5%	
Frequency	±0.003 Hz	0.001Hz
Harmonics	IEC 61000-4-7 Class I	0.001
Phase Angle	±0.2°	0.1°
	SCCPA Option: ±0.2° + Phase Error of SCCP	
U Unbalance	±0.1 %	0.01%
I Unbalance	±0.5%	0.01%
Pst, Plt	IEC 61000-4-15 Class F1	0.01%

Ordering Guide

Version 20260128

Product Code	Description
iMeter 8 Advanced Power Quality Analyzer	
Basic Function	
A	1024 samples/cycle, 32GB On-Board Memory IEC 61000-4-30 Ed. 3.1 Class A Certified
B*~	1024 samples/cycle, 32GB On-Board Memory IEC 61000-4-30 Ed. 3.1 Class A Certified with 2kHz-150kHz C.E. Measurement
Input Current	
5	5A
1	1A
SCCPA^	SCCP Option for use with CT Clamps with max. 500mV output
Input Voltage	
9	400VLN/690VLL + 20%
Power Supply	
2	95-250VAC/DC ± 10%, 47-440Hz
3*#	20-60VDC
System Frequency	
5	50Hz
6	60Hz
I/O	
A	8xDI + 4xDO + 4xSS Pulse Output
B*~	8xDI + 4xDO + 2xAI + 1xAO + 4xSS Pulse Output
C*	16xDI + 8xDO + 4xSS Pulse Output
D*~	8xDI + 4xDO + 2xAI + 2xAO + 2xSS Pulse Output
DI Excitation	
N	Dry Contact (@24VDC Self-Excitation) (UL Certified)
1#	110V AC/DC External Excitation
2#	220V AC/DC External Excitation
Communication Ports	
A	2x10Base-T/100Base-TX + 2xRS-485
Time Sync.	
A	GPS, IRIG-B
Display Language	
E	English

iMeter 8	-	A	5	9	2	5	A	N	A	A	E	iMeter 8-A5925ANAAE (Standard Model)

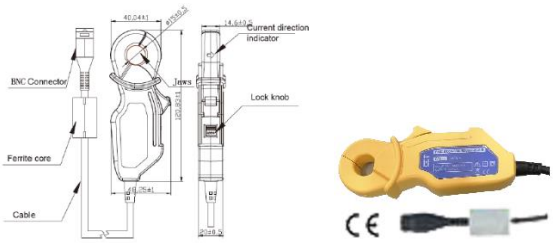
*Additional charges apply

~ The I/O options "B" and "D" are not supported when the Basic Feature option "B" is selected.

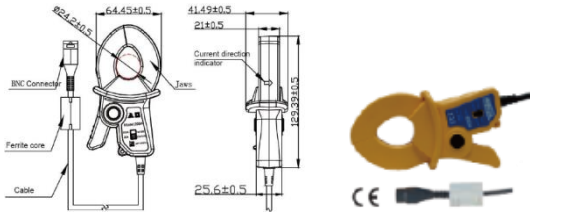
^ The SCCPA option is compatible with the SCCP models listed in the "SCCP and Accessories" sheet. This option does not come with any Current Clamp. Please refer to the "SCCP and Accessories" sheet for more information and order the desired model and quantity as a separate item.

#The DI Excitation options "1" and "2" are not supported when the Power Supply option "3" with 20-60VDC is selected.

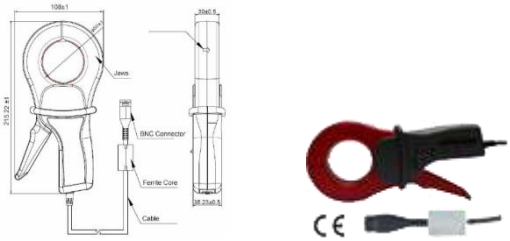
Optional 50A, 200A, 500A and 5000A CATIII Split-Core Current Probes for Non-Intrusive Applications.



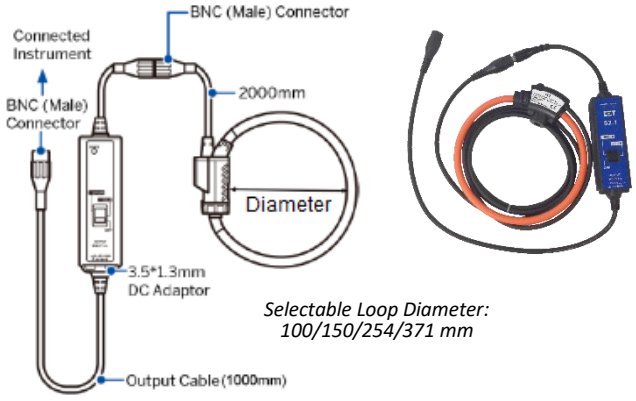
PMC-SCCP-50A-500mV



PMC-SCCP-200A-200mV



PMC-SCCP-500A-500mV



Selectable Loop Diameter: 100/150/254/371 mm

PMC-SCCP-5kA-500mV

Please refer to the Technical Specifications for more information about the SCCPs and Flexible Rogowski Coil.

Your Local Representative

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