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# iMeter 8
## Advanced Power Quality Analyzer




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- 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

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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 Analyzers 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 10Base-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 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 99$^{th}$ percentile very short time (3s) values
- 52 Weekly Reports for statistical evaluations on Voltage Harmonics (95$^{th}$ percentile) and Current Harmonics (95$^{th}$ and 99$^{th}$ 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 10Base-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

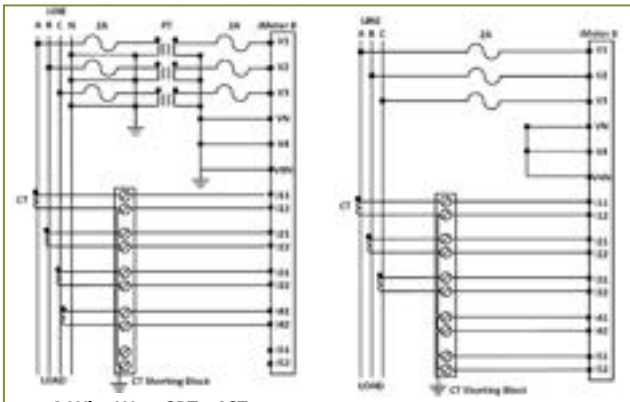
### iPQ Explore

- 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

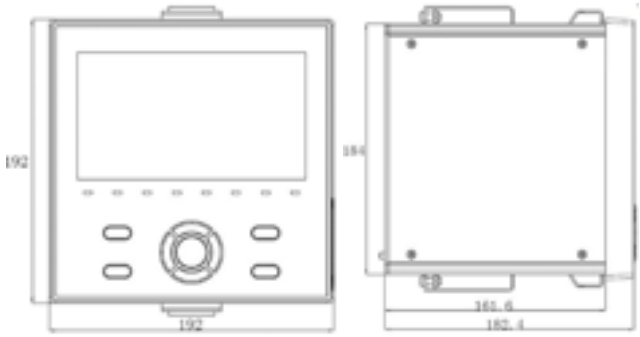
- Easy integration into Substation Automation or Utility SCADA systems via Modbus RTU, Modbus TCP or IEC 61850
- The on-board, password-protected Web Server provides user-friendly access to its data and supports the configuration for most Setup parameters via a web browser without the use of proprietary 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

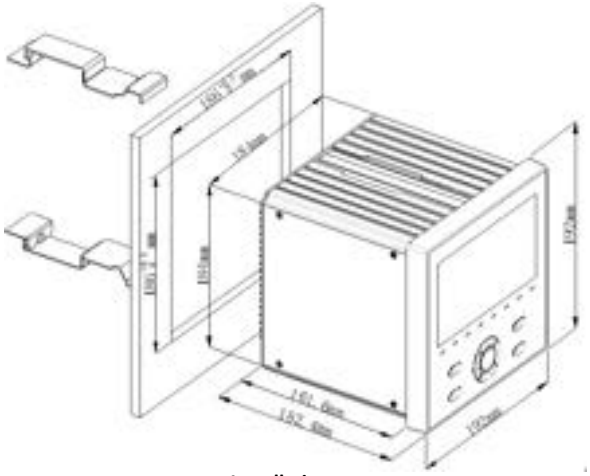


*4-Wire Wye, 3PTs, 4CTs* *3P3W, no PTs, 3CTs*

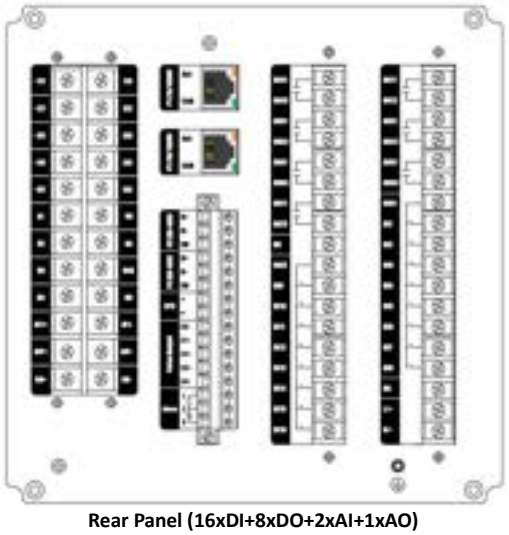
## Device Views and Mounting Diagram



**Front View** **Side View**



**Installation**



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

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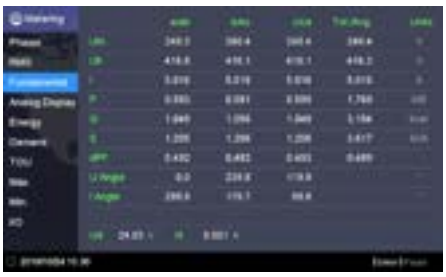
## *Front Panel User Interfaces*



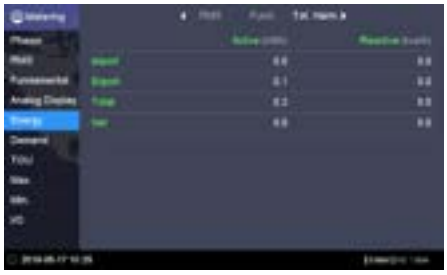
Phasor Diagram



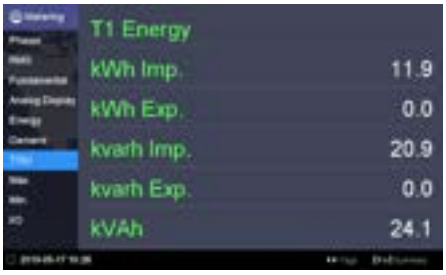
RMS



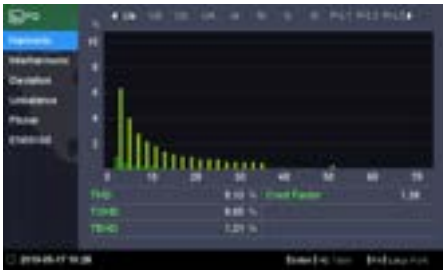
Fundamental Measurement



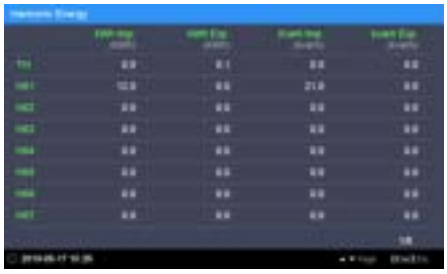
Energy Display




Large Character TOU Energy Display



Harmonics



Harmonic Energy Measurements



SEMI F47 Plot



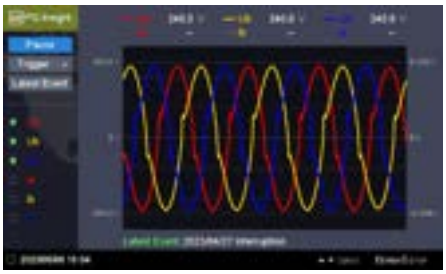
Events



Deviation



EN 50160 Report



Real-Time WF Capture



Record Setup



PQ 1 Setup



IEEE Std 519-2022 Report Setup

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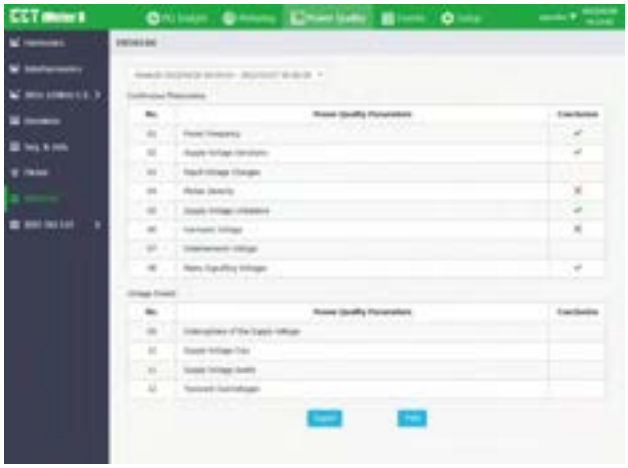
## *Web Interfaces*



Basic Measurements



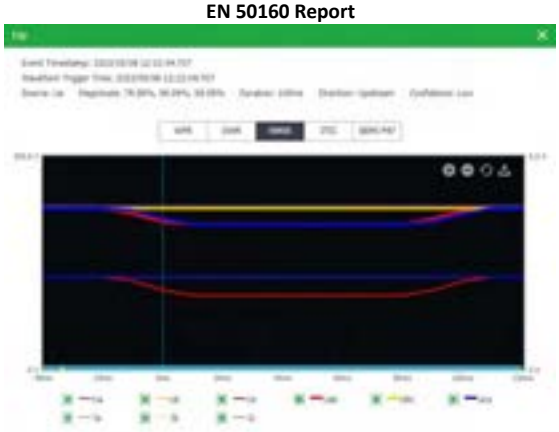
WFR Setup



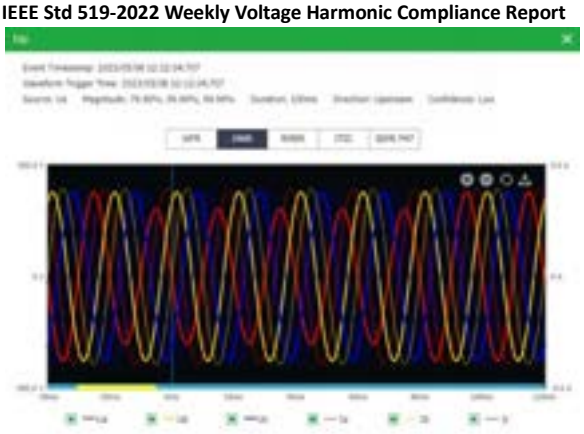
EN 50160 Report



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<br>< 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<br>EN IEC 61010-2-030: 2021 + A11: 2021 |
| cULus Listed | UL 61010-1, Ed.3, Rev 06/06/2023 |
| CB Test | IEC 61010-1: 2010,<br>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<br>AC Voltage: 2kV @ 1 minute<br>Insulation Resistance: >100MΩ<br>Impulse Voltage: 6kV, 1.2/50µs | IEC 62052-11: 2003<br>IEC 62053-22: 2003<br>EN 61010-1: 2010 + A1: 2019 |
| **EMC Compatibility<br>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<br>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<br>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 62052-31: 2015 |
| Vibration Test | IEC 62052-11: 2020 |
| Shock Test | IEC 62052-11: 2020 |
| **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*

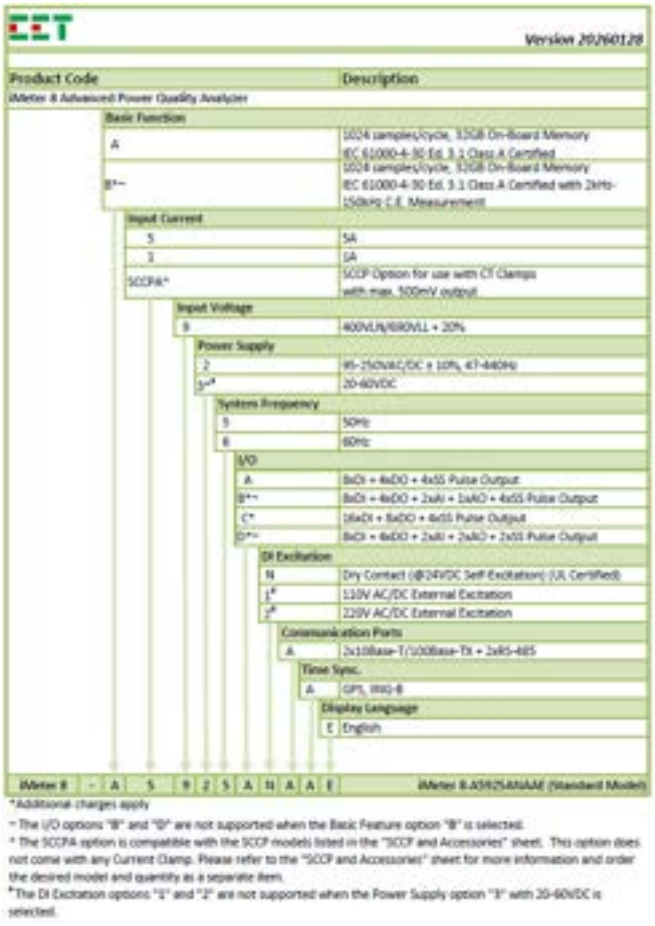
CET Electric Technology

# 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 62053-21 Class 0.5 | |
| kvarh | IEC 62053-24 Class 0.5S<br>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:<br>±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 2026012B

| Product Code | Description |
|---|---|
| iMeter 8 Advanced Power Quality Analyzer | |
| Basic Function | |
| A | 1024 samples/cycle, 32GB On-Board Memory<br>IEC 61000-4-30 Ed. 3.1 Class A Certified |
| B*~ | 1024 samples/cycle, 32GB On-Board Memory<br>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 | 400V(LN)/690V(LL) + 20% |
| Power Supply | |
| 2 | 85-250VAC/DC ± 10%, 47-440Hz |
| 3~* | 20-60VDC |
| System Frequency | |
| 5 | 50Hz |
| 6 | 60Hz |
| I/O | |
| A | 8xDI + 4xDO + 4x5S Pulse Output |
| B*~ | 8xDI + 4xDO + 2xAI + 1xAO + 4x5S Pulse Output |
| C* | 16xDI + 8xDO + 8x5S Pulse Output |
| D*~ | 8xDI + 4xDO + 2xAI + 2xAO + 2x5S 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-A59/25ANAAE (Standard Model) |

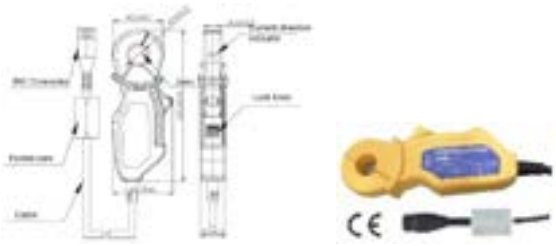
*Additional charges apply

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

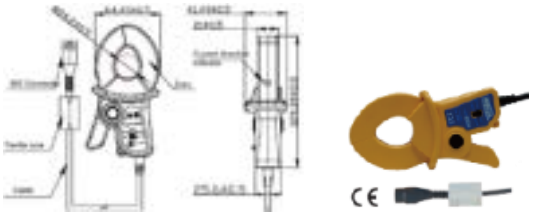
* The SCCPA option is compatible with the SCCP models listed in the "SCCP and Accessories" sheet. This option does not come with any Current Clamp. Please refer to the "SCCP and Accessories" sheet for more information and order the desired model and quantity as a separate item.

*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.*



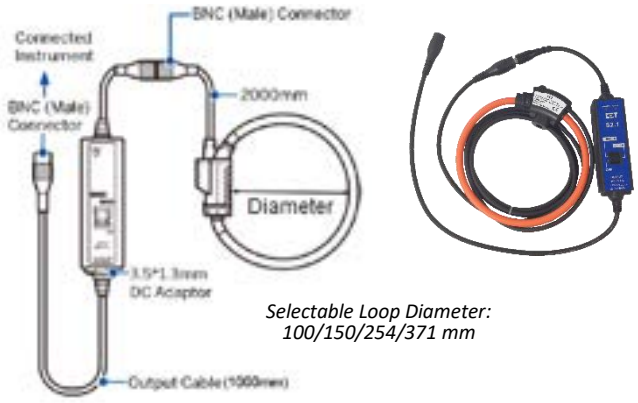
***PMC-SCCP-50A-500mV***



***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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