



- True RMS @ 512 Samples/Cycle
- IEC 62053-22 Class 0.2S Compliant
- IEC 61000-4-30 Class S/A Certified
- IEC 61000-4-15 Flickermeter
- PQ Disturbance Detection
- DR, Max./Min. and SDR Logs
- Built-in Trend Curve Display
- Daisy Chain Ethernet and 1xRS-485
- SNMP, BACnet/IP, MQTT, MB Master
- SOE Log and Device Log
- Extended Temperature Range
- Extended Warranty

- 3.5" Color IPS LCD Display @ 320x240
- Max. 4GB Non-volatile Memory
- EN 50160 and IEEE Std 519-2022 Report
- IEC 61000-4-7 Harmonics/Interharmonics
- ½ cycle RMS Recorder
- WF Recording in COMTRADE Format
- On-board Secured Web Server
- Modbus RTU/TCP, HTTPS, NTP, SMTP
- IEC 61850 and IEC 60870-5-104 Support
- IP54 Rated
- Industrial Grade Components
- Standard Tropicalization





The iMeter 5 is one of CET's latest Advanced Modular PQ Analyzer designed for the compliance monitoring market as it offers unsurpassed functionality by combining Class 0.2S Accuracy and advanced PQ Features in an industry-standard compact DIN96 form factor with a stunning, high resolution, color IPS LCD display and highly sensitive touch buttons. The iMeter 5 complies with such standards as IEC 62053-22: 2020 Class 0.2S, IEC 62052-31: 2015, IEC 61000-4-30 Ed. 3.1 Class S / Class A Certified, IEC 61000-4-15, IEC 61000-4-7, EN 50160-2022, IEEE Std 519-2022. Furthermore, the iMeter 5 offers up to 4GB memory, 4xDI, 2xDO, dual 10Base-T/100Base-TX Daisy Chain Ethernet ports, an RS-485 port and an RJ45 port for modular I/O expansion. It can be easily integrated into Building Management Systems, Power Quality Monitoring Systems as well as Substation Automation Systems with Modbus TCP/RTU, BACnet/IP, SNMP, IEC 61850, IEC 60870-5-104 and other protocols. These features make the iMeter 5 a vital component of various systems for different applications.

Typical Applications

- Class 0.2S Revenue Metering
- PQ monitoring of Mains and Critical Feeders
- HV, MV and LV Applications
- Data Centers, Semiconductor Fabs, Heavy Industries, Renewable **Energy Applications**
- 7x24 Automated Manufacturing Facilities
- IEC 61850 support for Substation Automation and Smart Grid
- Retrofit applications with optional Class 0.5S Split-Core Current Probes

Basic Features

- IEC 62053-22 Class 0.2S kWh metering with Multi-Tariff TOU
- True RMS @ 512 samples/cycle sampling
- 512MB (Classic Model), 2GB (Class S Model) or 4GB (Class A Model) on-board log memory
- Industrial-grade, 3.5" High-Resolution Color IPS LCD @ 320x240
- **Device Operating Time (Running Hours)**
- Time Sync. via NTP, IRIG-B, or GPS 1PPS output
- 32 Programmable Setpoints
- Dual 10Base-T/100Base-TX Daisy Chain Ethernet and 1xRS-485 ports as well as 1xRJ45 port for modular I/O expansion

Power Quality Features

- Optional IEC 61000-4-30 Ed. 3.1 Class S / Class A certified
- EN 50160-2022 and IEEE Std 519-2022 Reporting
- Dips, Swells, Interruptions, Transients, Rapid Voltage Change, Inrush Current, Mains Signalling Voltage and Flickers monitoring
- Real-time Waveform Capture (WFC), Waveform Recording (WFR) & Disturbance Waveform Recording (DWR) in COMTRADE File format
- Disturbance Direction Indicator for Dips, Swells and Interruptions
- Statistical Data Recording and ½ cycle RMS Recording

Front Panel Display and Web Interface

- True RMS Real-time, Harmonics, Power and Energy Measurements
- Phasor Diagram, Harmonics & Interharmonics Histogram
- Real-time WFC of 3-phase U & I @ 128 samples/cycle x 4 cycles
- Event WF Display @ max. 512 samples/cycle & ITIC/SEMI F47 Curves
- Trend Curves for Daily/Monthly Energy Consumption, DR & SDR Log
- 3-Phase Total and Per-Phase AER & IER Logs
- Max. & Min. Logs
- Deviation, Sequence Components & Unbalance
- Demands and Multi-Tariff TOU
- Device and SOE Logs, PQ Counters and I/O Status
- **Device Configuration and Diagnostics**

Power Quality Metering

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

iMeter 5

- Power Frequency
- Magnitude of the Supply Voltage
- Supply Voltage Dips, Swells and Interruptions
- Supply Voltage Unbalance
- Voltage Harmonics and Interharmonics
- Mains Signalling Voltage on the Supply Voltage
- Rapid Voltage Changes (RVC)
- Measurement of Overdeviation and Underdeviation Parameters
- Magnitude of Current
- Harmonic and Interharmonic Currents
- **Current Unbalance**

Harmonic and Interharmonic Measurements

- U and I THD, TOHD, TEHD, TIHD, TOIHD, TEIHD and TH (RMS)
- Current TDD, TDD Odd and TDD Even
- U and I Individual Harmonics (%HD and RMS) from 2nd to 63rd#
- K-Factor for Current, Crest Factor for Current and Voltage
- U and I Individual Interharmonics (%IHD and RMS) from 1st to 63rd #
- Fundamental U, I, P, Q, S Phase Angle and Displacement PF
- Harmonic Phase Angle from 2nd to 63rd
- U and I DC Components

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

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 and Interruptions detection @ 10ms (½ cycle at 50Hz)
- Trigger for DO, SOE Log, DR, WFR, DWR, RMSR, iTrigger and Alarm Email
- Configurable DO trigger for the Start or End of a PQ disturbance
- 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 PQ disturbances that are outside of the respective tolerance curves

Transients Recording

- Transients capture as short as 40us for sub-cycle disturbances such as capacitor switching and resonance phenomena
- Trigger for DO, SOE Log, WFR, DWR, RMSR, iTrigger and Alarm Email
- Display of Event specific WFR, DWR and/or RMSR on the Front Panel and Web Interface

Rapid Voltage Change (RVC)

Detection of a quick transition in RMS Voltage between two steady-states

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 PQ Event is located upstream or downstream
- Pinpoint if the cause of the event is external or internal

Dips, Swells, Interruptions, Transients, Rapid Voltage Change, Inrush Currents, 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 I4 (Measured Neutral Current), In (Calculated Neutral Current), Ung (Neutral-to-Ground Voltage), Frequency and IR (Calculated Residual Current)

High-Speed Measurements

3-phase U, I, P, Q, S and PF as well as I4 @ ½ cycle

- Per-phase kWh, kvarh Import/Export/Net/Total and kVAh Total
- Total RMS kWh, kvarh Import/Export/Net/Total and kVAh Total
- Total Fundamental kWh, kvarh Import/Export/Net/Total
- Total Harmonic kWh, kvarh Import/Export/Net/Total and Harmonic kWh, kvarh Import/Export from 2nd to 63rd

*Features may vary by model. Please refer to the Feature Differences table on Page 4.



Demands

- Present and Predicted Demands for 3-phase U, U Avg., I, I Avg., I Fund., P, Q, S, PF as well as I4, I4 Fund.
- Max. Demands for 3-phase I, I Fund., Ull & I Avg., as well as Power of This Month & Last Month (or Since Last Reset & Before Last Reset)
- Demand Synchronization with DI
- Max./Min. per Demand Interval

Multi-Tariff TOU capability

- Two independent sets of TOU Schedule
 - · Up to 12 Seasons
 - 90 Holidays or Alternate Days and 3 Weekdays
 - 20 Daily Profiles, each with 12 Periods
 - 8 Tariffs, each providing the following information:
 - kWh/kvarh Import/Export and kVAh
 - P & Q Import/Export Max. Demands
- Switching between two TOU schedules manually or according to preprogrammed time
- 12 Historical Logs for Energy and Max. Demand

Setpoints

PQ Setpoints

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

Control Setpoint

- 32 Control Setpoints can be configured with extensive monitoring sources including U, I, Freq., P, Q, S, PF, Demands, Harmonics, Unbalances, Deviations, Flickers, Phase Reversal/Loss, TC and AI, etc.
- Configurable thresholds and time delays
- Trigger DO, DR, SOE Log, WFR, DWR, RMSR, iTrigger and Alarm Email

Digital Input Setpoint

- Provides Control Output Actions in response to changes in DI status
- Trigger DO, DR, SOE Log, WFR, DWR, RMSR, iTrigger and Alarm Email

Data and Event Recorders

Non-Volatile Log Memory

Up to 4GB on-board Log memory

SOE Log

- 512 FIFO events time-stamped to ±1ms resolution
- Setpoint event, I/O operation, Dips, Swells, Interruptions, Transients, Rapid Voltage Change, Inrush Current, Mains Signalling Voltage, iTrigger, etc.
- Record the characteristic data for Setpoint events as well as WFR, DWR, RMSR, ITIC and SEMI F47 Curve for PQ events

Device Log

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

Statistical Data Recorder (SDR)

- 4 SDR Logs of max. 64 parameters each
- Recording of the Max., Min., Avg. and 95th percentile values for realtime measurements including U, I, P, Q, S, PF, Freq., Harmonics, Deviations and Unbalances
- Recording Interval from 1 to 60 minutes
- Configurable depths for recording up to 450 days at 15-min interval
- Downloadable via free software
- Support FIFO or Stop-When-Full mode

Data Recorder (DR)

- 8 DR Logs of max. 32 parameters each
- RMS/Fundamental/Harmonic/Interharmonic Measurements, Demands, Deviations, MSV, Unbalances and Flicker
- Configurable Recording Offset and Interval from 1s to 40 days
- Configurable Recording Depth with 65,535 (Group 1-7) & 120,000 (Group 8) records
- Support FIFO or Stop-When-Full mode
- BEC 2021 Compliant Data Recording for 3 years at 15-min interval

Trend Curve for SDR and DR

- Trend display of recorded SDR and DR parameters at selectable Interval via built-in web server
- Ability to export the recorded logs in tabular form via the web server

Max./Min. Recorder (MMR)

- 4 Max./Min. Recorders of max. 20 programmable parameters each
- RMS/Fundamental/Harmonic/Interharmonic Measurements, Demands, Deviations. Unbalances and Flicker

iMeter 5

- Two transfer modes:
 - Manual: Max./Min. Since Last Reset & Before Last Reset
 - Auto: Max./Min. of This Month & Last Month

Interval Energy Recorder (IER) and Accumulative Energy Recorder (AER)

- Both IER Log and AER Log support the recording of per-phase and Total RMS kWh, kvarh Import/Export/Total/Net and kVAh Total, Total Fundamental and Total Harmonic kWh, kvarh Import/Export
- Recording Interval from 1 minute to 65,535 minutes
- Max. Recording Depth @ 65,535 records for each group
- Support FIFO and Stop-When-Full mode
- Support to read and export the IER/AER logs via built-in web server#
 #Feature supported in Firmware V1.50.01 and later

Daily / Monthly Energy Consumption Trend Curve

- 36 Monthly and 31 Daily Energy Consumption Trend Display for kWh, kvarh Import/Export and kVAh Total on Front Panel and web interface
- Ability to export the Energy Log in tabular form via the web server
- FIFO Recording Mode

Real-Time Waveform Capture (WFC) and Waveform Recorder (WFR)

- Real-time WF Capture @ 128 samples/cycle x 4 cycles
- WFR with max. 128 entries
- Simultaneous capture of 3-phase Voltage and 4-phase Current Inputs
- Programmable formats and pre-fault cycles including 640x16, 320x32, 160x64, 80x128, 40x256, 20x512 (No. of cycles x Samples/Cycle)
- Scheduled WFR with max. repetition of 10,000 times and programmable schedule from 1 to 1440 minutes.
- COMTRADE file format, downloadable from the on-board Web server or FTPS server

Disturbance Waveform Recorder (DWR)

- 128 entries
- Simultaneous recording of all Voltage (U1-U3) 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

RMS Recorder (RMSR)

- 128 entries
- 8 channels max., selectable U, I, P, Q, S, PF, Frequency, Freq. Deviation
- Recording Interval from 0.5 to 60 cycles
- Recording Width @ 7200 samples per parameter
- Configurable pre-fault samples from 100 to 500
- 72 seconds of ½ cycle RMS recording @ 50Hz or 60 seconds @ 60Hz

iTrigger

- Cross trigger DO, SOE Log, WFR, DWR, RMSR and Alarm Email with other iMeter devices within the same local area network (LAN)
- Group ID and MAC Address provided as the trigger source

IEEE Std 519-2022 Report

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

Time Synchronization

- Battery-backed Real-time clock @ 6ppm (≤ 0.5s/day)
- Time Sync. with auto-selection among Modbus RTU, NTP, GPS 1PPS, and IRIG-B

Inputs and Outputs

Digital Inputs

- 4 channels, volts free dry contact, 24VDC internally wetted
- 1000Hz sampling for status monitoring with programmable debounce
- Pulse counting with programmable weight for each channel for collecting WAGES (Water, Air, Gas, Electricity, Steam) information
- Demand Synchronization
- Tariff switching based on DI status

*Features may vary by model. Please refer to the Feature Differences table on Page 4.



iMeter 5

Digital Outputs

- Standard 2 channels Form A Mechanical Relays for general purpose control and alarming
- Optional 2 SS Relays for Energy pulsing applications

Modular I/O Expansion

RJ45 connector for modular I/O expansion such as AI, AO, DI, DO, Residual Current (Ir) and Temperature (TC) Inputs

Communications

Ethernet Port (P1, P2)

- Dual 10Base-T/100Base-TX Daisy Chain Ethernet Ports with RJ45 connector
- Selectable IP Addressing Mode DHCP and Static
- White List for Client Access Control
- Protocols supported: Modbus TCP, HTTP/HTTPS, NTP, SMTP, SNMP, FTP/FTPS, RSTP, MQTT, BACnet/IP, IEC 61850 and IEC 60870-5-104
- 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 5xModbus TCP and 5xIEC 61850

RS-485 (P3)

- One optically isolated RS-485 port with Baud Rate from 1.2 to 38.4 kbps
- Support Modbus RTU, Ethernet Gateway and Modbus Master#
- Support up to 31 downstream Modbus Slave Devices#

#Modbus Master is supported in Firmware V1.50.01 and later

System Integration

PecStar® iEMS

The iMeter 5 is supported by CET's PecStar® iEMS.

On-board Web/FTPS Server

- 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
- The on-board, password protected FTPS Server allows the Excel files for the logged C.E. Measurement data, IEEE Std 519-2022 Daily and Weekly reports and the COMTRADE files for the waveform records to be downloaded without any special software. The downloaded files can be subsequently viewed using software that supports these industry standard file formats

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
- Ability to export the 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, Utility SCADA or BMS systems via Modbus, IEC 61850, IEC 60870-5-104 and BACnet/IP protocols

Feature Differences

Features Model	(PQA)	(PQI-S)	(PQI-A)
Memory Size	512MB	2GB	4GB
IEC 61000-4-30 Certified		Class S	Class A
Interharmonics			
Flicker (Pst, Plt)		•	
Rapid Voltage Change			
Transient		•	•
Inrush Current		•	•
Mains Signalling Voltage			•
2kHz-9kHz C. E.			•
Individual Harm. Energy			•
U & I DC Component		•	•
EN 50160 Report		•	•
IEEE 519-2022 Report		•	•
Statistical Data Recording		•	•
IEC 61850			
GPS & IRIG-B Time Sync.		•	•
iTrigger		•	•
DWR			•

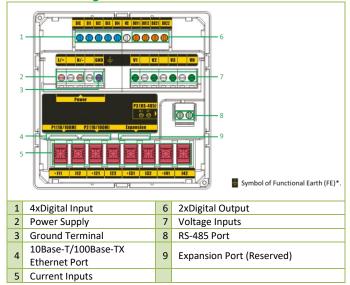
⁻⁻ Not Applicable

■ Supported

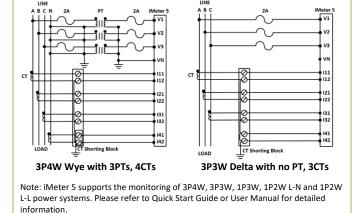
Technical Specifications				
Voltage Inputs (V1, V2, V				
Standard (Un)	400VLN/690VLL + 20%			
Range	4-800V L-N / 7-1380V L-L			
Overload	2xUn continuous, 4xUn for 1s			
Burden	< 0.5VA/per phase			
PT Ratio	10.5 Vi y per pridse			
Primary	1-1,000,000V			
Secondary	1-1,500V			
Measurement Category	CAT III 600V			
Frequency	40Hz-72Hz			
	·121, I22, ·131, I32, ·141, I42)			
Standard (In)	5A			
Optional (In)	1A			
Range	0.1% to 200% In			
Starting Current	0.1% In			
Overload	2xIn continuous, 4xIn for 10s, 20xIn for 1s			
Burden	< 0.75VA/per phase @ 5A			
Buruch	< 0.5VA/per phase @ 1A			
CT Ratio	10.5 VAy per pridse @ 1A			
Primary	1-30,000A			
Secondary	1-50A			
14 Primary	1-30,000A			
14 Secondary	1-50A			
SCCP Options	Split-Core Current Probe Input @ max. 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,			
3007 30007 3001117	max. 500mV Output			
Power Supply (L/+, N/-)				
Power Supply (L/+, N/-) Standard	95-277VAC/VDC ± 10%, 47-440 Hz			
Standard	95-277VAC/VDC ± 10%, 47-440 Hz 20-60VDC			
	95-277VAC/VDC ± 10%, 47-440 Hz 20-60VDC < 6W			
Standard Optional Burden	20-60VDC			
Standard Optional Burden Overvoltage Category	20-60VDC < 6W OVC III 300V			
Standard Optional Burden	20-60VDC < 6W OVC III 300V			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I	20-60VDC < 6W OVC III 300V DIZ, DI3, DI4)			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, E Standard	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, E Standard Sampling Hysteresis	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I Standard Sampling Hysteresis Digital Outputs (DO11, D	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22)			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, E Standard Sampling Hysteresis	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I) Standard Sampling Hysteresis Digital Outputs (DO11, D) Type Loading	20-60VDC < 6W OVC III 300V DIZ, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I) Standard Sampling Hysteresis Digital Outputs (DO11, D) Type Loading Optional Solid State Puls	20-60VDC < 6W OVC III 300V DIZ, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-)			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I) Standard Sampling Hysteresis Digital Outputs (DO11, D) Type Loading	20-60VDC < 6W OVC III 300V DIZ, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I) Standard Sampling Hysteresis Digital Outputs (DO11, D Type Loading Optional Solid State Puls	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I) Standard Sampling Hysteresis Digital Outputs (DO11, D) Type Loading Optional Solid State Puls Type Isolation	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I) Standard Sampling Hysteresis Digital Outputs (DO11, D) Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I Standard Sampling Hysteresis Digital Outputs (DO11, D Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I Standard Sampling Hysteresis Digital Outputs (DO11, D Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I Standard Sampling Hysteresis Digital Outputs (DO11, D Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque U & I Inputs	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I Standard Sampling Hysteresis Digital Outputs (DO11, D Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque U & I Inputs DI, DO & RS-485	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, E Standard Sampling Hysteresis Digital Outputs (DO11, D Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque U & I Inputs DI, DO & RS-485 Environmental Condition	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, E Standard Sampling Hysteresis Digital Outputs (DO11, D Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque U & I Inputs DI, DO & RS-485 Environmental Condition Operating Temperature	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA 1.2N·m 0.4N·m s -25°C to 70°C			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I) Standard Sampling Hysteresis Digital Outputs (DO11, D) Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque U & I Inputs DI, DO & RS-485 Environmental Condition Operating Temperature Storage Temperature	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA 1.2N·m 0.4N·m s -25°C to 70°C -40°C to 85°C			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I) Standard Sampling Hysteresis Digital Outputs (DO11, D) Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque U & I Inputs DI, DO & RS-485 Environmental Condition Operating Temperature Storage Temperature Humidity	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA 1.2N·m 0.4N·m s -25°C to 70°C -40°C to 85°C 5% to 95% non-condensing			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I) Standard Sampling Hysteresis Digital Outputs (DO11, D) Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque U & I Inputs DI, DO & RS-485 Environmental Condition Operating Temperature Storage Temperature Humidity Atmospheric Pressure	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA 1.2N·m 0.4N·m s25°C to 70°C -40°C to 85°C 5% to 95% non-condensing 60 kPa to 106 kPa 2			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I) Standard Sampling Hysteresis Digital Outputs (DO11, D) Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque U & I Inputs DI, DO & RS-485 Environmental Condition Operating Temperature Storage Temperature Humidity Atmospheric Pressure Pollution Degree	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA 1.2N·m 0.4N·m s25°C to 70°C -40°C to 85°C 5% to 95% non-condensing 60 kPa to 106 kPa 2			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, I Standard Sampling Hysteresis Digital Outputs (DO11, D Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque U & I Inputs DI, DO & RS-485 Environmental Condition Operating Temperature Humidity Atmospheric Pressure Pollution Degree Mechanical Characteristi	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA 1.2N·m 0.4N·m s -25°C to 70°C -40°C to 85°C 5% to 95% non-condensing 60 kPa to 106 kPa 2 cs			
Standard Optional Burden Overvoltage Category Digital Inputs (DIC, DI1, E Standard Sampling Hysteresis Digital Outputs (DO11, D Type Loading Optional Solid State Puls Type Isolation Max. Load Voltage Max. Forward Current Terminals Max. Torque U & I Inputs DI, DO & RS-485 Environmental Condition Operating Temperature Humidity Atmospheric Pressure Pollution Degree Mechanical Characteristi Panel Cutout	20-60VDC < 6W OVC III 300V DI2, DI3, DI4) Dry contact, 24VDC internally wetted 1000Hz 1ms minimum O12, DO21, DO22) Form A Mechanical Relay 5A @ 250VAC/30VDC e Outputs (E1+, E1-, E2+, E2-) Form A Solid State Relay Optical 30VDC 100mA 1.2N·m 0.4N·m s -25°C to 70°C -40°C to 85°C 5% to 95% non-condensing 60 kPa to 106 kPa 2 cs 92x92 mm			



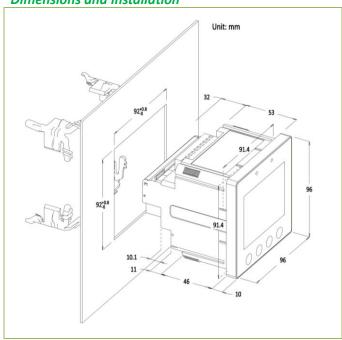
Terminal Diagram



Typical Wiring Diagram



Dimensions and Installation



Front Panel Display



Accuracy

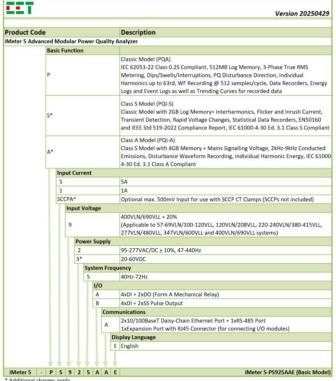
Parameters	Accuracy		Resolution
Voltage (U)	±0.1%		0.001V
11, 12, 13, 14	5A/1A ±0.1% SCCPA ±0.1% + Error of SCCP		0.001A
11, 12, 13, 14			
P, Q, S	5A/1A	±0.2%	0.001k
r, Q, 3	SCCPA	±0.5%	0.001K
kWh, kVAh	5A/1A	IEC 62053-22 Class 0.2S	0.01kXh
KVVII, KVAII	SCCPA	IEC 62053-21 Class 1	U.UIKAII
	5A/1A	IEC 62053-24 Class 0.5S	0.01kvarh
kvarh		IEC 62053-23 Class 2	
KVaIII	SCCPA	IEC 62053-24 Class 1	
		IEC 62053-23 Class 2	
PF	5A/1A	±0.2%	0.001
F1	SCCPA	±0.5%	0.001
Phase Angle	±1°		0.1°
Freq., Freq. Deviation	±0.003 Hz		0.001Hz
Harmonics, Interharmonics	IEC 61000-4-7 Class I		0.01%
U Unbalance	±0.1%		0.01%
I Unbalance	±0.5%		0.01%
Pst, Plt	IEC 61000-4-15 Class F1		0.001



Standard of Compliance

Safety Requirements					
CE LVD 2014 / 35 / EU	EN 61010-1: 2010 + A1: 2019				
	EN IEC 61010-2-030: 2021				
Electrical Safety in Low Voltage	IEC 61557-12: 2021 (PMD)				
Distribution Systems up to 1000Vac					
and 1500 Vdc					
Insulation	IEC 62052-31: 2015				
	EN 61010-1: 2010 + A1: 2019				
AC Voltage	2kV @ 1 minute				
Insulation Resistance	>100MΩ				
Impulse Voltage	6kV, 1.2/50μs				
EMC Compatibility					
CE EMC Directive 2014 / 30 / EU					
(EN IEC 61326-1: 2021 + EN IEC 61326-2-3: 2021)					
Immunity (EN					
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 + AC: 2015				
Magnetic Fields	EN 61000-4-8: 2010				
Voltage Dips and Interruptions	EN IEC 61000-4-11: 2020				
Ring Wave	EN 61000-4-12: 2017				
Emission (EN	50081-2)				
Limits and Methods of					
Measurement of Electromagnetic	EN 55044, 2046 : 44, 2047 :				
Disturbance Characteristics of	EN 55011: 2016 + A1: 2017 +				
Industrial, Scientific and Medical	A2: 2021				
(ISM) Radio-Frequency Equipment					
Electromagnetic Compatibility of					
Multimedia Equipment - Emission	EN 55032: 2015 + AC: 2016 +				
Requirements	A11: 2020				
Limits for Harmonic Current	EN IEC 61000-3-2: 2019 + A1:				
Emissions for Equipment with Rated					
Current ≤16 A	2021				
Limitation of Voltage Fluctuations					
and Flicker in Low-Voltage Supply	EN 61000-3-3: 2013 + A1: 2019				
Systems for Equipment with Rated	+ A2: 2021				
Current ≤16 A					
Emission Standard for Industrial	511150 51000 S 1 2010				
Environments	EN IEC 61000-6-4: 2019				
Mechanical Tests					
Spring Hammer Test	IEC 62052-31: 2015				
Vibration Test	IEC 62052-11: 2020				
Shock Test	IEC 62052-11: 2020				
Power Qu	uality				
Voltage Characteristics of Electricity					
supplied by Public Distribution	EN 50160: 2022				
Systems					
General Guide on Harmonic and					
Interharmonic Measurements and					
Instrumentation, for Power Supply	IEC 61000-4-7: 2009				
Systems and Equipment Connected					
Thereto					
Flickermeter - Functional and					
Design Specifications	IEC 61000-4-15: 2010				
Testing and Measurement					
Techniques - Power Quality	IEC 61000-4-30: 2021 Ed. 3.1				
Measurement Methods					
Power Quality Measurement in					
Power Supply Systems - Part 2:					
Functional Tests and Uncertainty	IEC 62586-2: 2021 Ed. 2.1				
Requirements					
nequirements					

Ordering Guide

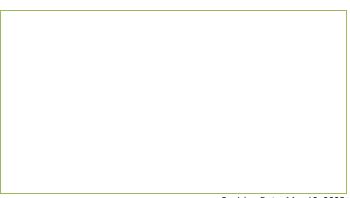


iMeter 5

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Your Local Representative



Revision Date: May 12, 2025

^{*} Additional charges apply

^ 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.