MULTIFUNCTION POWER & HARMONICS ANALYZER

Model - KM 2300



CLASS A

- Standard Accessories

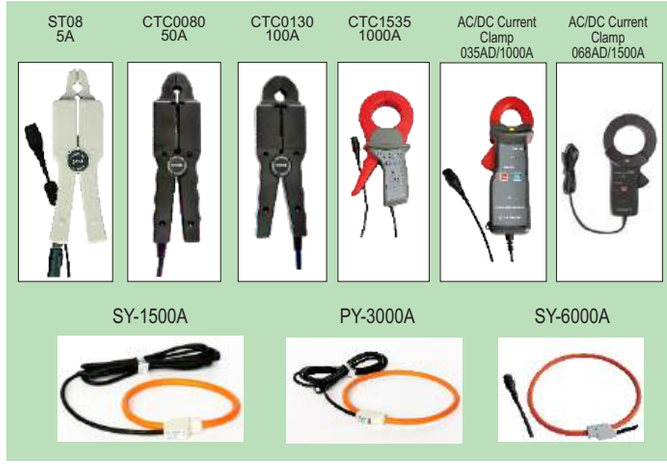


✷ Display : 5.6' Colour TFT LCD, 640x480, Adjustable brightness.

✷ FEATURES :

- Waveform real-time display(4 voltages/4 currents)
- Half cycle RMS measurement (voltage and current)
- Intuitive operation
- Variety of optional current clamps
- Measure DC component
- Measurement of harmonics can be up to 100 times.
- Transient capture
- Vector, Trend, Bar Graph and events table display
- Active power, reactive power, apparent power and energy, shift power factor and true power factor.
- Three-phase unbalance (voltage and current).
- Flicker
- Inrush current
- Detection and record of Dips & Swells, Voltage Rapid Change, Interruption.
- Detect according to EN50160 or grid with user-defined limit.
- Data storage and screenshots (can be replayed or output to a PC)
- Through the LAN interface PC can keep real-time remote communication with the Analyzer, operate the Analyzer and download measurement data.
- Built-in 32G memory card.
- WIFI communication is supported.

- Optional Accessories :



✷ ACCESSORIES :

- Voltage Test Leads x 5, Alligator Clips x 5, Power Adaptor, Power cord, Hang Strap, Software CD with User Manual & Carrying Case.

✷ OPTIONAL ACCESSORIES :

- **AC Current Transformer**
  ST08 (5A); CTC0080 (50A); CTC0130 (100A); CTC1535 (1000A)
- **AC Rogowski Coil**
  SY-1500A (1500A); PY-3000A (3000A); SY-6000A (6000A)
- **AC/DC Current Clamp** 035AD (1000A)
  AC/DC Current Clamp 068AD (1500A)

ELECTRICAL SPECIFICATIONS : KM 2300

FREQUENCY MEASUREMENT

Nominal frequency	Measurement range	Resolution	Accuracy
50Hz	42.50~57.50 Hz	0.01Hz	±0.01Hz
60Hz	51.00~69.00 Hz	0.01Hz	±0.01Hz
400Hz	320~480Hz	0.01Hz	±0.01Hz

Note : measured on Reference Voltage Input L1/A

VOLTAGE INPUT

Numbers of input	4(3phase + neutral)
Max continuous input voltage	1000Vrms
Range of nominal voltage	Selectable,1V to 1000V according to IEC61000-4-30
Max pulse peak voltage	6kV
Input impedance	4MΩ

CURRENT INPUT

Numbers of input	4(3phase + neutral)
Type	Clamp Current Sensor mV output
Max input voltage	10V
Input range	According to current clamps
Input impedance	100kΩ

SAMPLING SYSTEM

Resolution	8 channels 16bits AD
Sampling rate	200kS/s Type 8 channels sample synchronously
RMS sampling	4096 points for 10/12 cycles (according to IEC 61000-4-30)
PLL sync	4096 points for 10/12 cycles (according to IEC61000-4-7)

MEASURING MODES AND PARAMETERS

Measurement mode	Measured parameters
Oscilloscope	Vrms、Arms、Vcursor、Acursor、Hz
Voltage/current/frequency	Vrms、Vpk、Arms、Apk、CF、Hz
Dips&Swells	Vrms1/2, Arms1/2, capture up to 1000 events Include Time ,date, duration, magnitude and phase mark, and Threshold is settable
Harmonic	1-100, harmonic voltage, THD voltage, harmonic current,THD current, interharmonic voltage, interharmonic current

MEASUREMENT RANGE, RESOLUTION, ACCURACY

Voltage/Current/ Frequencyc	Measurement range	Resolution	Accuracy
Vrms (AC+DC)	1~120Vrms 120~400Vrms 400~1000Vrms	0.001Vrms 0.01Vrms 0.1Vrms	±0.1% of nominal voltage
Vpk	1~1400Vpk	0.01Vpk	±0.5% of nominal Voltage
V(CF)	1.0~>2.8	0.01	±0.5% of nominal Voltage
Arms (current clamps error not include)10mV/A, 1mV/A, 65mV/1000A(AC)	0~150A 1~2000A 10~6000A	0.1A 1 A 0.01kA	±0.1% ± 0.5A ±0.1% ± 5 A ±0.1% ± 50 A
A(CF)	1~10	0.01	±5%
Frequency 50Hz nominal Frequency 60Hz nominal Frequency 400Hz nominal	42.5~57.5 51~69 320 ~480	0.01Hz 0.01Hz 0.01Hz	±0.01Hz ±0.01Hz ±0.01Hz

Dips&Swells	Measurement range	Resolution	Accuracy
Vrms1/2	0~200%Nominal Voltage	0.01Vrms	±0.2%
Arms1/2	According to current clamps	Ref to Arms	±1% + 5counts
Threshold value	Threshold is settable according to nominal voltage percentage detectable events type: Dips, Swells, Interruption, Voltage Rapid change		
Duration	Hour- minute - second-microsecond	0.5 cycle	1Period

Power & energy	Measurement range	Resolution	Accuracy
P, S, Q1, PF cosΦ	Max6000MW 0~1 0~1	0.1kW 0.01 0.01	±1%±10 counts ±0.01 ±0.01
Kwh, kVAh, kvarh	Depends on clamp scaling and V nominal		±1%±10 counts

Flicker(50/60Hz)	Measurement range	Resolution	Accuracy
Pst (10 minutes) Plt (2 hours)	0.00~20.00	0.01	±5%

Unbalance	Measurement range	Resolution	Accuracy
Voltage unbalance	0.0~20.0%	0.1%	±0.1%
Current unbalance	0.0~20.0%	0.1%	±1%
Voltage phase	-360°~ 0°	0.1°	±0.1°
Current phase	-360°~ 0°	0.1°	±0.5°

Inrush current	Measurement range	Resolution	Accuracy
Arms	According to current Clamps	Ref to Arms	±1% ± 10 Counts
Inrush duration Time	1~32 min settable	10ms	±20ms

Harmonic	Measurement range	Resolution	Accuracy
Harmonic order(400Hz)	1~12		
Interharmonic order(400Hz)	No		
Harmonic order(50/60Hz)	1~100		
Interharmonic order(50/60Hz)	0~99		
Harmonic voltage% f	0.0~100.0%	0.01%	±0.1% ±n×0.1%
Harmonic voltage% r	0.0~100.0%	0.01%	±0.1% ±n×0.4%
Harmonic current% f	0.0~100.0%	0.01%	±0.1% ±n×0.1%
Harmonic current% r	0.0~100.0%	0.01%	±1% ±n×0.4%
THD	0.0~100.0%	0.01%	±2.5%
Frequency	0~6000Hz	0.01Hz	0.1Hz
Phase	-180°~180°	0.1°	±n×0.1°
Absolute voltage	0~1000V	0.01V	±1%reading (harmonics >1%nominal value)±0.05% reading (harmonics <1% nominal value)
Absolute current	0~6000A	0.01A	±1% reading (harmonics >3%nominal value) ±0.05% reading (harmonics <3 % nominal value)

Voltage transients	Measurement range	Resolution	Accuracy
Vpk	±6000Vpk	0.01V	±15%
Vrms	10~1000Vrms	0.01V	±2.5%
Minimum test time	5μs		
Sampling rate	200kS/s		

Interface	
USB host interface	Copy saved file to PC from a U disk, then analyze it with upper computer software.
LAN interface	For remote control of the analyzer and measurement data transmission.

Standard	
Measurement method	IEC 61000-4-30 A class
Measurement performance	IEC 61000-4-30 A class
Power quality monitoring	EN 50160
Flicker	IEC 61000-4-15
Harmonic	IEC61000-4-7
Power measurement method	IEEE1459

Memory	
Flash memory	1G
Micro SD	Standard 32G

Case	
Drip and dust proof	Ip53 degree. The IP rating refers to non operation of the product and does not voltage in wet environments.

Environment	
Working temperature	0°C~45°C
Storage temprature	-10°C~45°C
Humidity	90% relativehumidity

Mechanical	
Dimension	270mm×190mm×66mm
Weight	2 kg

Safety	
Complied with	IEC610101 Safety degree 600V CAT IV, 1000V CAT III pollution degree2
Maximum voltage at voltage input	600V CAT IV 1000V CAT III
Maximum voltage at current input	10V

Power	
Adapter input	AC 100-240V 50/60 HZ
Adapter output	DC 12V 2A
Battery	Lithium battery : 7.4V 5200mAh
Battery time operating	>8 hours (screen brightness is in level 3)
Battery charge time	6 hours

Wiring Combinations	
1P + Neutral	Single phase with neutral
1P Split phase	Split phase
1P IT No Neutral	Single phase system with two phase voltages without neutral
3P WYE	3-phase-4 wire system Y type
3P Delta	3-phase-3 wire system delta (Delta)
3P IT	3-phase Y type without neutral
3P High Leg	4-wire 3-phase delta system (Delta) with center tapped high leg
3P Open Leg	Open-delta (Delta) 3-wire system with two transformer windings
2-Element	3-phase-3wire system without current sensor on phase L2/B (2Watt meter method)
2.5-Element	3-phase 4wire system without voltage sensor on phase L2/B

Model	Range	Turns ratio	Accuracy	Sizemm
ST08	AC :5A	10mV/A	0.2%	Φ8
CTC0080	AC :50A	10mV/A	0.2%	Φ8
CTC0130	AC :100A	1mV/A	0.2%	Φ13
CTC1535	AC :1000A	1mV/A	1.2%	Φ52
035AD	AC/DC : 1000A	1mV/A	3.0%	30x35
SY-1500A	AC : 1500A	100mV/1000A	0.5%+(1%position error)	Φ110
PY-3000A	AC : 3000A	65mV/1000A	1.0%+(2%position error)	Φ160
SY-6000A	AC : 6000A	65mV/1000A	1.0%+(2%position error)	Φ250