

SA2100/SA2200 Power Quality Analyzer



Selection Guide

| Model | SA2100 | SA2200 |
|-----------------------------------|---------------------------|--|
| IEC61000-4-30 standard compliance | Class S | Class A, Ed.3 |
| AC/DC | ● | ● |
| Voltage/Current | ● | ● |
| Frequency | ● (50Hz,60Hz,400Hz) | ● 50Hz,60Hz,400Hz |
| Dips /swell | ● | ● |
| Harmonics | ● 1-50th (50/60Hz) | ● 1-100th (50/60Hz) |
| Power / Energy | ● | ● |
| Unbalance | ● | ● |
| Monitor | ● | ● |
| Inrush | ● | ● |
| Flicker | ● | ● |
| Transients | ● 20k/s | ● 200k/s |
| Logger | ● | ● |
| Mains signaling | ○ | ● |
| Wave Recording | ○ | ● |
| Input Characteristics | Channel (Voltage/Current) | 4/4 |
| | Voltage Range | 1-1000Vrms, 6000V transient voltage |
| | Current Range | depends on supplied current clamp |
| Storage | Micro SD card (build-in) | 8GB |
| | | 32GB |
| Battery | Capacity/Life | NI-MH, 3800mAh/>7h |
| | | Lithium ion, 5200mAh/>8h |
| Time Synchronization | GPS/Beidou | ○ |
| | | ● (option) |
| Communication | Interface | USB Host, LAN |
| | WIFI App | ○ |
| | | ● (option) |
| | Screen | 5.6" TFT LCD /320*240 |
| | | 5.6" TFT LCD /640*480 |
| | Language | 9- Chinese, English,French, German,Korean, Polish,Portuguese, Spanish, Turkish |
| | | 14-Chinese, English,French, German, Italian,Japanese, Korean, Polish,Portuguese(Brazil/Portugal), Russian,Spanish (Latin/Spain), Turkish |
| General Characteristic | Dimension/Weight | 262× 173×66 mm/1.6kg |
| | | 270 × 190×66mm/2.0kg |
| | Wire Combinations | 1Ø+NEUTRAL,1Ø SPLIT PHASE,1Ø IT NO NEUTRAL,3Ø WYE,3Ø DELTA, 3Ø IT, 3Ø HIGH LEG, 3Ø OPEN LEG, 2-ELEMENT, 1/ 2-ELEMENT |
| | Electrical Safety | IEC61010-1 ,Safety Degree: 600V CAT IV 1000V CAT III |



SA2100 Specification

| Measurement | Measurement Range | Resolution | Accuracy |
|---|---|------------|--------------------------|
| Voltage/Current/Frequency | | | |
| Vrms(AC+DC) | 1 ~ 1000Vrms | 0.1Vrms | ±0.5% of nominal voltage |
| Vpk | 1 ~ 1400Vpk | 0.1Vpk | ±0.5% of nominal voltage |
| V(Crest Factor) | 1.0 ~ >2.8 | 0.01 | ±5% |
| Arms (AC) | 10mV/A | 0~100A | ±0.5%±0.2A |
| | 1mV/A | 1~1000A | ±0.5%±0.2A |
| | 50mV(65mV)/1000A | 15~5000A | ±1%±2A |
| A(Crest Factor) | 1 ~ 10 | 0.01 | ±5% |
| Frequency | 42.5~57.5(50Hz nominal) | 0.01Hz | ±0.01Hz |
| | 51~69(60Hz nominal) | 0.01Hz | ±0.01Hz |
| | 385~414(400Hz nominal) | 0.01Hz | ±0.1Hz |
| Dips & Swells | | | |
| Vrms1/2 | 0 ~ 200% of nominal voltage | 0.1Vrms | ±1% |
| Arms1/2 | 1 ~ 3000A | 1A | ±1%±2A |
| Duration | hour-minute-second-microsecond | 0.5 cycle | 1 cycle |
| Harmonic (IEC61000-4-7) | | | |
| Harmonic Number | 1 ~ 50 | | |
| Harmonic Voltage %f | 0.0 ~ 100.0% | 0.1% | ±0.1% ± nx0.1% |
| Harmonic Current %f | 0.0 ~ 100.0% | 0.1% | ±0.1% ± nx0.1% |
| THD | 0.0 ~ 100.0% | 0.1% | ±2.5% |
| Phase | -360° ~ 0° | 1° | ± nx1.5° |
| Power and Energy | | | |
| Active Power/Apparent Power/Reactive Power | 1.0 ~ 20.00MW | 0.1kW | ±1.5±10 digits |
| KWh | 0.00kWh ~ 200GWh | 10Wh | ±1.5±10 digits |
| Power Factor | 0 ~ 1 | 0.01 | ±0.03 |
| Flicker (IEC61000-4-15) | | | |
| Pst(1min),Pst,Plt,PF5 | 0.00 ~ 20.00 | 0.01 | ±5% |
| Unbalance | | | |
| Voltage | 0.0 ~ 5.0% | 0.1% | ±0.5% |
| Current | 0.0 ~ 20.0% | 0.1% | ±1% |
| Voltage Phase | -360° ~ 0° | 1° | ±2 digits |
| Current Phase | -360° ~ 0° | 1° | ±5 digits |
| Voltage Transient | | | |
| Vpk | ±6000Vpk | 1V | ±15% |
| Vrms | 10 ~ 1000Vrms | 1V | ±2.5% |
| Min. Test Time | 50us | | |
| Inrush Current | | | |
| Arms | 0~3000Arms | 0.1 | ±1% ± 5 digits |
| Inrush Duration | 6s ~ 32min selectable | 10ms | ±20ms |
| Logger | | | |
| Recording | user-defined parameters for 4 phases at the same time | | |
| Memory | Data stored in Micro SD card, 8GB | | |
| Duration Time | 2 hrs to 1 year, depends on the recording items and time interval | | |
| Interval | 1s to 60 minutes | | |
| Monitor | | | |
| Support EN50160 in default or user-defined standard | | | |

Isolated Interface to ensure safe operation





SA2200 Specification

Measurement

| | Measurement Range | Resolution | Accuracy |
|---|---|----------------------------------|--------------------------|
| Voltage/Current/Frequency | | | |
| Vrms(AC+DC) | 1 ~ 120Vrms 120Vrms~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(Crest Factor) | 1.0 ~ >2.8 | 0.01 | ±5% |
| Arms (AC) | 10mV/A | 0.01A | ±0.1%±0.1A |
| | 1mV/A | 1~2000A | ±0.1%±0.1A |
| | 65mV/1000A | 10~6000A | ±0.1%±0.2A |
| A(Crest Factor) | 1 ~ 10 | 0.01 | ±5% |
| Frequency | 42.5~57.5 (50Hz nominal) | 0.01Hz | ±0.01Hz |
| | 51~69 (60Hz nominal) | 0.01Hz | ±0.01Hz |
| | 320~480 (400Hz nominal) | 0.01Hz | ±0.01Hz |
| Dips & Swells | | | |
| Vrms1/2 | 0 ~ 200% of nominal voltage | 0.01Vrms | ±0.2% |
| Arms1/2 | depends on current clamps | 0.01A | ±1% |
| Harmonic (IEC61000-4-7) | | | |
| Harmonic Number | 1 ~ 100(50/60Hz) (IEC61000-4-7) 1~12(400Hz) | | |
| Harmonic Voltage %f | 0.0 ~ 100.0% | 0.01% | ±0.1% ± nx0.1% |
| Harmonic Current %f | 0.0 ~ 100.0% | 0.01% | ±0.1% ± nx0.1% |
| THD | 0.0 ~ 100.0% | 0.01% | ±2.5% |
| Phase | -180° ~ 180 0° | 0.1° | ± nx0.1° |
| Power and Energy | | | |
| P, S, Q1 | Max. 6000MW | 0.1kW | ±1%±10 digits |
| PF & cosφ | 0 ~ 1 | 0.01 | ±0.01 |
| kWh, kVAh, kvarh | depends on nominal voltage and current clamps | | ±1%±10 digits |
| Flicker (IEC61000-4-15) | | | |
| Pst(10min)/Plt (2 hrs) | 0.00 ~ 20.00 | 0.01 | ±5% |
| Unbalance | | | |
| Voltage | 0.0 ~ 20.0% | 0.1% | ±0.1% |
| Current | 0.0 ~ 20.0% | 0.1% | ±1% |
| Voltage Phase | -360° ~ 0° | 0.1° | ±0.1° |
| Current Phase | -360° ~ 0° | 0.1° | ±0.5° |
| Voltage Transient | | | |
| Vpk | ±6000Vpk | 0.01V | ±15% |
| Vrms | 10 ~ 1000Vrms | 0.01V | ±2.5% |
| Min. Test Time | 5us | | |
| Inrush Current | | | |
| Arms | depends on current clamps | 0.01A | ±1% ± 5digits |
| Inrush Duration | 1 ~ 32min selectable | 10ms | ±20ms |
| Mains Signaling | | | |
| Signaling Frequency | 60-3000Hz | 0.1Hz | |
| Relative V% | 0%~100% | 0.10% | ±0.4% |
| Absolute V3s (3s average) | 0.0 ~ 1000V | 0.1V | ±5% of Nominal voltage |
| Logger | | | |
| Recording | user-defined parameters for 4 phases at the same time | | |
| Memory | Data stored in Micro SD card, 32GB | | |
| Duration Time | 2 hrs to 1 year, depends on the recording items and time interval | | |
| Interval | 1s to 60 minutes | | |
| Monitor | | | |
| Support EN50160 in default or user-defined standard | | | |

Accessories

| | | |
|--------------------------------------|----------------------|--------------|
| Voltage Test Leads + Alligator Clips | (SA2200) (SA2100) | (2m) × 5 pcs |
| Power Cord Power Adapter | | 1 pcs |
| Soft Carry Bag | | 1 pcs |
| CD (Software, Manuals) | | 1 pcs |
| Sticker of input port (SA2200) | | 1 pcs |

CT Clamps

| Clamp Mode | ST08-5A | CTC0080 | CTC0130 | CTC1535 | ETCR035AD |
|--------------------------|-----------|------------|------------|-------------|-------------------|
| Appearance | | | | | |
| Measurement Range | 0-5A | 0-50A | 1~100A | 1~1000A | 0.0-1000A (AC/DC) |
| Output Voltage Ratio | 10mV/A | 10mV/A | 1mV/A | 1mV/A | 1mV/A |
| Accuracy | 0.2% | 0.2% | 0.2% | 1% | ±3% |
| Frequency Characteristic | 45Hz~55Hz | 50Hz~400Hz | 50Hz~400Hz | 40Hz~100kHz | AC: 45Hz~400Hz |
| Clamp Radius (mm) | 8 | 8 | 13 | 52 | 30×35 |
| Dimension (mm) | 158×43×24 | 171×46×27 | 174×52×27 | 111×216×45 | 122×70×33 |
| Cable Length (cm) | 200 | 200 | 200 | 200 | 150 |
| Power | ○ | ○ | ○ | ○ | 9V Dry cell 6LR61 |

| Flexible Probes Mode | SY-1500A | PY-3000A | PY-5000A(SA2100) | SY-6000A(SA2200) |
|----------------------------|------------------------|----------------------|----------------------|----------------------|
| Appearance | | | | |
| Measurement Range | 1~1500A | 15~3000A | 20~5000A | 20~6000A |
| Output Voltage Ratio | 100mV/1000A @ 50Hz | 65mV/1000A @50Hz | 50mV/1000A @ 50Hz | 65mV/1000A @ 50Hz |
| Accuracy | ±0.5% + Position Error | ±1% + Position Error | ±1% + Position Error | ±1% + Position Error |
| Maximum Allowable Input | 100KA | 100KA | 100KA | 100KA |
| Phase Error | <±1° | <±1° | <±1° | <±1° |
| Noise | <2mVrms (10Hz~10KHz) | <2mVrms (10Hz~10KHz) | <2mVrms (10Hz~10KHz) | <2mVrms (10Hz~10KHz) |
| Frequency Characteristic | 10Hz~10KHz (-3dB) | 10Hz~10KHz (-3dB) | 10Hz~10KHz (-3dB) | 10Hz~10KHz (-3dB) |
| Weight | 110g | 130g | 150g | 200cm |
| Length | 200cm | 200cm | 200cm | 200cm |
| CT Perimeter | 35cm | 50cm | 80cm | 80cm |
| Measurement Position Error | ±1% | ±2% | ±2% | ±2% |