# S510 Power Quality Analyzer

## FEATURES

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| Comprehensive power quality analysis |
| Power, Harmonics, Transient, Tanφ, Phase angle, etc. |
| CT current-ratio measurement & K factor |
| Auto capture and log |
| Online monitoring function |
| Starting current monitoring |
| Up to 2000V line voltage; 9000A with Rogowski coil |
| 100, 200 and 300 mm Rogowski coils |

## SPECIFICATIONS

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| Power | 11.1V 7800mAh rechargeable Lithium-ion Battery |
| Battery Level Indicator | When the battery power is too low, it will automatically shut down after 1 minute. |
| Power Consumption | The current consumption is 410mA, and the battery can work continuously for about 15 hours when fully charged. |
| Display Mode | LCD, 640dots×480dots, 5.6 inches, display area:116mm×88mm |
| Jaw size | S-008 Current Clamp: 7.5mm x 13mm (Optional)<br>S-070 Current Clamp: Φ70mm (Optional)<br>S-105 Current Clamp: Φ105mm (Optional)<br>S-150 Current Clamp: Φ150mm (Optional)<br>S-200JF Φ200mm (Standard); S-100JF/S-300JF Φ100/Φ300mm (Optional) |
| Instrument Size | L:182mm x W:68mm x H:275mm |
| Number of Channels | 4U/4I |
| Line Voltage | 1.0V to 2000V |
| Phase Voltage | 1.0V to 1000V |
| Current | S-008 Current Clamp: 10mA to 10.0A<br>S-070 Current Clamp: 0.10A to 100A<br>S-105 Current Clamp: 1.0A to 200A<br>S-150 Current Clamp: 10.0A to 600A<br>S-100JF/S-200JF/S-300JF Rogowski: 5–100A, 50–1000A, 100–9000A |
| Frequency | 40Hz to 70Hz |
| CT Turn Ratio | ✔ |
| Parameters of electricity | W，VA，Var，PF，DPF，cosφ，tanφ |

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| Energy Parameters | Wh，Varh，Vah |
| Harmonic | 50 |
| Total Harmonic distortion | 1～50, each phase |
| Expert Mode | ✔ |
| Number of Transient Record | 150 Sets |
| Voltage Flicker | ✔ |
| Starting Current | 100 Seconds |
| Three Phase Unbalance | ✔ |
| Record | 960 days, record 20 parameters at the same time, record 1 point every 1 second |
| Min/Max | ✔ |
| Alarm | 40 different types of parameter selections, 12,800 sets alarm logs |
| Peak Value | ✔ |
| Screenshot Capacity | 60 |
| Menu Language | Chinese and English |
| USB interface | ✔ |
| Automatic shut-down | In alarm/trend graph record/start current detection/transient capture/online power and energy mode, the instrument will not automatically shut down. |
| | In other test modes, if it is not in the test state or there is no key operation for 15 minutes, it will automatically shut down after 1 minute. |
| Backlight | Suitable for dark places and night use |
| Instrument Weigh | Instrument weight: appro 1.6kg including battery |
| | S-008 Current Clamp：appro 170g×4； （Optional） |
| | S-070 Current Clamp：appro 556g×4； （Optional） |
| | S-105 Current Clamp：appro 558g×4；(Optional) |
| | S-150 Current Clamp：appro 1.2kgx4；(Optional) |
| | S-200JF Rogowski Coil: approx. 325g x 4, including battery (Standard) |
| | Test leads and power adapter：appro 900g； |
| | Total Weight：appro 15kg including outer packing |
| Voltage Test Line Length | 3m |
| Current Clamp Line length | 2m |
| Working Temperature and Humidity | -10°C to 40°C；below 80%Rh |
| Storage Temperature and Humidity | -10°C to 60°C；below 70%Rh |
| Input Resistance | 1MΩ |
| Withstand Voltage | The sine wave AC voltage of 3700V/50Hz between the instrument line and housing lasts for 1 minute. |
| Insulation | Insulation between the instrument line and the sheath ≥10MΩ |
| Structure | Double insulation with insulating and vibration-proof sheath |

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| Safety Regulation | IEC 61010 1000V Cat III / 600V CAT IV，IEC61010-031，IEC61326，Pollution Level 2 |

## Accuracy

| Measurement | Measurement Range | Resolution | Tolerance |
|---|---|---|---|
| Frequency | 40Hz to 70Hz | 0.01Hz | ±(0.03)Hz |
| True RMS Voltage | 1.0V to 1000V | 0.1V | ±(0.5%+5dgt) |
| True RMS Line Voltage | 1.0V to 2000V | 0.1V | ±(0.5%+5dgt) |
| DC Voltage | 1.0V to 1000V | 0.1V | ±(1.0%+5dgt) |
| True RMS Current | 10mA to 9000A | 1mA | ±(0.5%+5dgt) |
| Phase Voltage Peak | 1.0V to 1414V | 0.1V | ±(1.0%+5dgt) |
| Neutral Line voltage Peak | 1.0V to 2828V | 0.1V | ±(1.0%+5dgt) |
| Current Peak | 10mA to 12727A | 1mA | ±(1.0%+5dgt) |
| CF | 1.00 to 3.99 | 0.01 | ±(1%+2dgt) |
| | 4.00 to 9.99 | 0.01 | ±(5%+2dgt) |
| Active Power | 0.000W to 9000.0kW | 0.001W | ±(1%+3dgt) Cosφ≥0.8 |
| | | | ±(1.5%+10dgt) 0.2≤Cosφ<0.8 |
| Reactive Power, inductive or capacitive | 0.000VAR to 9000.0kVAR | 0.001VAR | ±(1%+3dgt) Sinφ≥0.5 |
| | | | ±(1.5%+10dgt) 0.2≤Sinφ<0.5 |
| Apparent Power | 0.000VA to 9000.0kVA | 0.001VA | ±(1%+3dgt) |
| Power Factor | -1.000 to 1.000 | 0.001 | ±(1.5%+3dgt) Cosφ≥0.5 |
| | | | ±(1.5%+10dgt) 0.2≤Cosφ<0.5 |
| Active Electrical Energy | 0.000Wh to 9000.0MWh | 0.001Wh | ±(1%+3dgt) Cosφ≥0.8 |
| | | | ±(1.5%+10dgt) 0.2≤Cosφ<0.8 |
| Reactive Electrical Energy, Inductive or Capacitive | 0.000VARh to 9000.0MVARh | 0.001VARh | ±(1%+3dgt) Sinφ≥0.5 |
| | | | ±(1.5%+10dgt) 0.2≤Sinφ<0.5 |
| Apparent Electrical Energy | 0.000VAh to 9000.0MVAh | 0.001VAh | ±(1%+3dgt) |
| Phase Angle | -179° to 180° | 1° | ±(2°) |
| Tanφ (VA≥50VA) | -32.76 to 32.76 | 0.001 | φ:±(1°) |

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| DPF | -1.000 to 1.000 | 0.001 | φ:±(1°) |
| Harmonic Ratio 1～50 (Vrms>50V) | 0.0% to 99.9% | 0.1% | ±(1%+5dgt) |
| Harmonic Angle (Vrms>50V) | -179° to 180° | 1° | ±(3°)Harmonic order 1to 25 |
| | | | ±(10°) Harmonic order 26 to 50 |
| Total Harmonic Ratio (THDor THD-F)≤50 | 0.0% to 99.9% | 0.1% | ±(1%+5dgt) |
| (THF) | 0.0% to 99.9% | 0.1% | ±(1%+5dgt) |
| Distortion Factor (DF or THD-R)≤50 | 0.0% to 99.9% | 0.1% | ±(1%+10dgt) |
| Transformer K Factor | 1.00 to 99.99 | 0.01 | ±(5%) |
| 3 Phase Unbalance | 0.0% to 100% | 0.1% | ±(1%) |

## Current Sensors

| Current Clamp | True RMS Current | Max Tolerance of True RMS Current | Max Tolerance of Phase Angle φ |
|---|---|---|---|
| S-008 | 10mA to 99mA | ±(1%+3dgt) | ±(1.5°),Arms≥20mA |
| | 100mA to 10.0A | ±(1%+3dgt) | ±(1°) |
| S-070 | 0.10A to 0.99A | ±(1%+3dgt) | ±(1.5°) |
| | 1.00A to 100A | ±(1%+3dgt) | ±(1°) |
| S-105 | 1.0A to 9.9A | ±(2%+3dgt) | ±(3°) |
| | 10.0A to 200A | ±(2%+3dgt) | ±(2°) |
| S-150 | 10.0A to 600A | ±(2%+3dgt) | ±(2°) |
| S-100JF, S-200JF, S-300JF Rogowski Coils | 5A to 100A | ±(1%+3dgt) | ±(3°) |
| | 50A to 1000A | ±(1%+3dgt) | ±(2°) |
| | 100A to 9000A | ±(1%+3dgt) | ±(2°) |

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