

# S510 Power Quality Analyzer



## FEATURES

Comprehensive power quality analysis
Power, Harmonics, Transient, Tan $\phi$ , Phase angle, etc.
Turns ratio testing & K factor
Auto capture and log
Online monitoring function
Starting current monitoring
Up to 2000V line voltage & 9000A
Current clamp size up to $\Phi$ 200mm



## SPECIFICATIONS

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 $\times$ 480dots, 5.6 inches, display area:116mm $\times$ 88mm
Jaw size	S-008 Current Clamp : 7.5mm $\times$ 13mm (Optional) S-070 Current Clamp : $\Phi$ 70mm (Optional) S-105 Current Clamp : $\Phi$ 105mm (Optional) S-150 Current Clamp : $\Phi$ 150mm (Optional) S-200JF Rogowski Coil : $\Phi$ 200mm $\circ$ (Optional)
Instrument Size	L:265mm $\times$ W:215mm $\times$ H:85mm
Number of Channels	4U/4I
Line Voltage	1.0V $\sim$ 2000V
Phase Voltage	1.0V $\sim$ 1000V
Current	S-008 Current Clamp : 10mA $\sim$ 10.0A ; S-070 Current Clamp : 0.10A $\sim$ 100A ; S-105 Current Clamp : 1.0A $\sim$ 200A ; S-150 Current Clamp : 10.0A $\sim$ 600A ; S-200JF Rogowski Coil : 5A $\sim$ 100A, 50A $\sim$ 1000A, 100A $\sim$ 9000A
Frequency	40Hz $\sim$ 70Hz
CT Turn Ratio	✓
Parameters of electricity	W , VA , Var , PF , DPF , cos $\phi$ , tan $\phi$

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 Weight	Instrument weight: appro 1.6kg including battery
	S-008 Current Clamp : appro 125g×4 ; (Optional)
	S-070 Current Clamp : appro 556g×4 ; (Optional)
	S-105 Current Clamp : appro 558g×4 ; (Optional)
	S-150 Current Clamp : appro 1.2kg×4 ; (Optional)
	S-200JF Rogowski Coil : appro 325g×4, including battery ; (Optional)
	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~40°C ; below 80%Rh
Storage Temperature and Humidity	-10°C~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 ◦

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

Measurement	Measurement Range	Resolution	Tolerance
Frequency	40Hz~70Hz	0.01Hz	$\pm(0.03)\text{Hz}$
True RMS Voltage	1.0V~1000V	0.1V	$\pm(0.5\%+5\text{dgt})$
True RMS Line Voltage	1.0V~2000V	0.1V	$\pm(0.5\%+5\text{dgt})$
DC Voltage	1.0V~1000V	0.1V	$\pm(1.0\%+5\text{dgt})$
True RMS Current	10mA~9000A	1mA	$\pm(0.5\%+5\text{dgt})$
Phase Voltage Peak	1.0V~1414V	0.1V	$\pm(1.0\%+5\text{dgt})$
Neutral Line voltage Peak	1.0V~2828V	0.1V	$\pm(1.0\%+5\text{dgt})$
Current Peak	10mA~12727A	1mA	$\pm(1.0\%+5\text{dgt})$
CF	1.00~3.99	0.01	$\pm(1\%+2\text{dgt})$
	4.00~9.99	0.01	$\pm(5\%+2\text{dgt})$
Active Power	0.000W~9000.0kW	0.001W	$\pm(1\%+3\text{dgt})$ $\text{Cos}\varphi \geq 0.8$
			$\pm(1.5\%+10\text{dgt})$ $0.2 \leq \text{Cos}\varphi < 0.8$
Reactive Power, inductive or capacitive	0.000VAR~9000.0kVAR	0.001VAR	$\pm(1\%+3\text{dgt})$ $\text{Sin}\varphi \geq 0.5$
			$\pm(1.5\%+10\text{dgt})$ $0.2 \leq \text{Sin}\varphi < 0.5$
Apparent Power	0.000VA~9000.0kVA	0.001VA	$\pm(1\%+3\text{dgt})$
Power Factor	-1.000~1.000	0.001	$\pm(1.5\%+3\text{dgt})$ $\text{Cos}\varphi \geq 0.5$
			$\pm(1.5\%+10\text{dgt})$ $0.2 \leq \text{Cos}\varphi < 0.5$
Active Electrical Energy	0.000Wh~9000.0MWh	0.001Wh	$\pm(1\%+3\text{dgt})$ $\text{Cos}\varphi \geq 0.8$
			$\pm(1.5\%+10\text{dgt})$ $0.2 \leq \text{Cos}\varphi < 0.8$
Reactive Electrical Energy, Inductive or Capacitive	0.000VARh~9000.0MVARh	0.001VARh	$\pm(1\%+3\text{dgt})$ $\text{Sin}\varphi \geq 0.5$
			$\pm(1.5\%+10\text{dgt})$ $0.2 \leq \text{Sin}\varphi < 0.5$
Apparent Electrical Energy	0.000VAh~9000.0MVAh	0.001VAh	$\pm(1\%+3\text{dgt})$
Phase Angle	-179°~180°	1°	$\pm(2^\circ)$
Tan $\varphi$ (VA $\geq$ 50VA)	-32.76~32.76	0.001	$\varphi: \pm(1^\circ)$

DPF	-1.000~1.000	0.001	$\varphi:\pm(1^\circ)$
Harmonic Ratio 1~50 (Vrms>50V)	0.0%~99.9%	0.1%	$\pm(1\%+5\text{dgt})$
Harmonic Angle (Vrms>50V)	-179°~180°	1°	$\pm(3^\circ)$ Harmonic order 1 to 25
			$\pm(10^\circ)$ Harmonic order 26 to 50
Total Harmonic Ratio (THD or THD-F) $\leq 50$	0.0%~99.9%	0.1%	$\pm(1\%+5\text{dgt})$
(THF)	0.0%~99.9%	0.1%	$\pm(1\%+5\text{dgt})$
Distortion Factor (DF or THD-R) $\leq 50$	0.0%~99.9%	0.1%	$\pm(1\%+10\text{dgt})$
Transformer K Factor	1.00~99.99	0.01	$\pm(5\%)$
3 Phase Unbalance	0.0%~100%	0.1%	$\pm(1\%)$

### Current Clamps (Optional)

Current Clamp	True RMS Current	Max Tolerance of True RMS Current	Max Tolerance of Phase Angle $\varphi$
S-008	10mA~99mA	$\pm(1\%+3\text{dgt})$	$\pm(1.5^\circ)$ , Arms $\geq 20\text{mA}$
	100mA~10.0A	$\pm(1\%+3\text{dgt})$	$\pm(1^\circ)$
S-070	0.10A~0.99A	$\pm(1\%+3\text{dgt})$	$\pm(1.5^\circ)$
	1.00A~100A	$\pm(1\%+3\text{dgt})$	$\pm(1^\circ)$
S-105	1.0A~9.9A	$\pm(2\%+3\text{dgt})$	$\pm(3^\circ)$
	10.0A~200A	$\pm(2\%+3\text{dgt})$	$\pm(2^\circ)$
S-150	10.0A~600A	$\pm(2\%+3\text{dgt})$	$\pm(2^\circ)$
S-200JF Rogowski Coil	5A~100A	$\pm(1\%+3\text{dgt})$	$\pm(3^\circ)$
	50A~1000A	$\pm(1\%+3\text{dgt})$	$\pm(2^\circ)$
	100A~9000A	$\pm(1\%+3\text{dgt})$	$\pm(2^\circ)$

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