■GENERAL SPECIFICATIONS

Display (LCD)	Dot matrix LCD (240×128 dots), Display Size : 53mm(H)× 92mm(W)
Display Sampling Rate	Waveform : 4 times / sec., Readings : 2 times / sec.
Measurement Items	DC Voltage, AC Voltage, Resistance, Continuity, Frequency, Duty Cycle, Pulse Width, Temperature
Frequency bandwidth	DC to 200kHz
Max. Sampling Rate	2MS / sec.
Max. Input Voltage	DC 1000V / AC (rms) 600V ※Crest factor 1.5 or less
Number of Channels	2 channels
Input Resistance	Approx. 1MΩ
Language	English, Japanese (Default : English)
Oscilloscope Function	Graphic waveform display for voltage measurement
DMM Function	Displays for DCV, ACV, Resistance, Continuity, Frequency, Duty Cycle, Pulse Width, Temperature
Internal Power Supply	1.5V LR6 or R6P batteries 4 pcs. (NiMH rechargeable battery usable)
External Power Supply	USB mini-B connector (DC5V)
Auto Power Off	Turn off after a lapse of 30 minutes (for battery operation only, default setting : OFF)
Data Saving	Screen capture : save "HOLD" display as image data (PNG format)
	Data logger : save sampling data (CSV format)
	※Data saving capacity : approx. 3.7M bytes (data transfer to PC available with USB connection)
Operating Temperature & Humidity	−10℃ to 50℃, less than 80%RH (in non-condensing)
Storage Temperature & Humidity	−20℃ to 60℃, less than 70%RH (in non-condensing)
Power Consumption	Backlight-ON : approx. 170mA, Backlight-OFF : approx. 100mA
Continuous Measurement	Manganese : approx. 2.5 hours for backlight-ON, approx. 4.5 hours for backlight-OFF
	Alkaline, NiMH (1900mAh) : approx. 10 hours for backlight-ON, approx. 18 hours for backlight-OFF
Safety Level	CE Marking approved (main unit) EN61010-1 CAT II 300V class 2, EN61326-1
Dimensions & Weight	Approx. 162mm(H)×167mm(W)×35mm(D), 570g (excluding batteries)
Accessories	Holster (attached to the main unit), 100-57 Test Leads, 903 AC/DC Adapter (USB 5V output), 934 USB cable,
	1035 Carrying Case, 1.5V R6P Batteries 4 pcs, Instruction Manual
Optional Accessories	660 AC/DC Clamp Adapter, 100-57R Red Test Lead, 100-72 Oscilloscope Test Lead Set, 100-41 Test Lead Kit,
	100-62 Test Lead Set, 653 RPM Sensor (for Direct Ignition), 650 RPM Sensor (for High Tension Cord),
	940 Alligator Clips, 793 Coil-Type Contact Pin, 944 Test Pin, 946 Battery Clip, 818-02 Temperature Probe

■MEASUREMENT SPECIFICATIONS (23℃±5℃, less than 80%RH in non-condensing)

Temperature Coefficient : add "accuracy×0.1 / ℃" except 23℃±5℃

Voltage (Graph mode) Frequency bandwidth : DC to 200kHz

V / Div	Accuracy
200mV / 2V / 20V	±4dot
500mV / 5V / 50V / 200V	±2dot
1V / 10V / 100V / 500V	±1dot

DC Voltage (DMM mode)

Range	Accuracy	Resolution	Max. Input
200.0mV	±1.0%rdg±8dgt	100μV	1000V DC
2.000V		1mV	
20.00V		10mV	
200.0V		100mV	
1000V	±1.0%rdg±5dgt	1V	

AC Voltage (AC V rms) DMM mode

Range	Accuracy	Resolution
2.000V	±2.0%rdg±8dgt (45Hz to 1kHz) ±2.5%rdg±8dgt (1kHz to 10kHz) ±4.0%rdg±8dgt (10kHz to 20kHz) ±6.0%rdg±8dgt (20kHz to 30kHz)	1mV
20.00V		10mV
200.0V		100mV
600V	±2.0%rdg±5dgt (45 to 1kHz), ±2.5%rdg±5dgt(1kHz to 10kHz)	1V

※Max. Input : 600V AC (rms) / Crest factor 1.5 or less
※20.00V range : for 18V to 20V, add ±1.0% to the accuracy
※200.0V range : for 180V to 200V add ±1.0% to the accuracy, frequency effective 45Hz to 20kHz

Duty Cycle (%) DMM mode

Range	Accuracy	Resolution	Input Sensitivity
5.0% to 95.0%	±0.5%rdg±3dgt	0.1%	5V (square wave)

Resistance (Ω) DMM mode

Range	Accuracy	Resolution	Open Circuit Voltage
2.000kΩ	±1.0%rdg±8dgt	1Ω	≦3.3V
20.00kΩ		10Ω	

Continuity (•)) DMM mode

Range	Accuracy	Resolution	Open Circuit Voltage
2.000kΩ	±1.0%rdg±8dgt	1Ω	≦3.3V
	Buzzer sounds when approx. 50Ω or less		

Frequency (Hz) DMM mode

Range	Accuracy	Resolution	Input Sensitivity
5.00Hz to 99.99Hz	±0.2%rdg ±2dgt	0.01Hz	5V (square wave)
100.0Hz to 999.9Hz		0.1Hz	
1.000kHz to 9.999kHz		1Hz	
10.00kHz to 99.99kHz		10Hz	

Pulse Width (S) DMM mode

Range	Accuracy	Resolution	Input Sensitivity
10μS to 999μS	±0.5%rdg ±3dgt	1μS	5V (square wave)
1.0mS to 999.9mS		0.1mS	

Temperature (℃) DMM mode

Range	Accuracy	Resolution	Sensor
−50℃ to 220℃	±4℃ (10℃ to 50℃) ±5℃ (−50℃ to 9℃ / 51℃ to 220℃)	1℃	K-type thermocouple

DISTRIBUTOR

All specifications are subject to change without notice.

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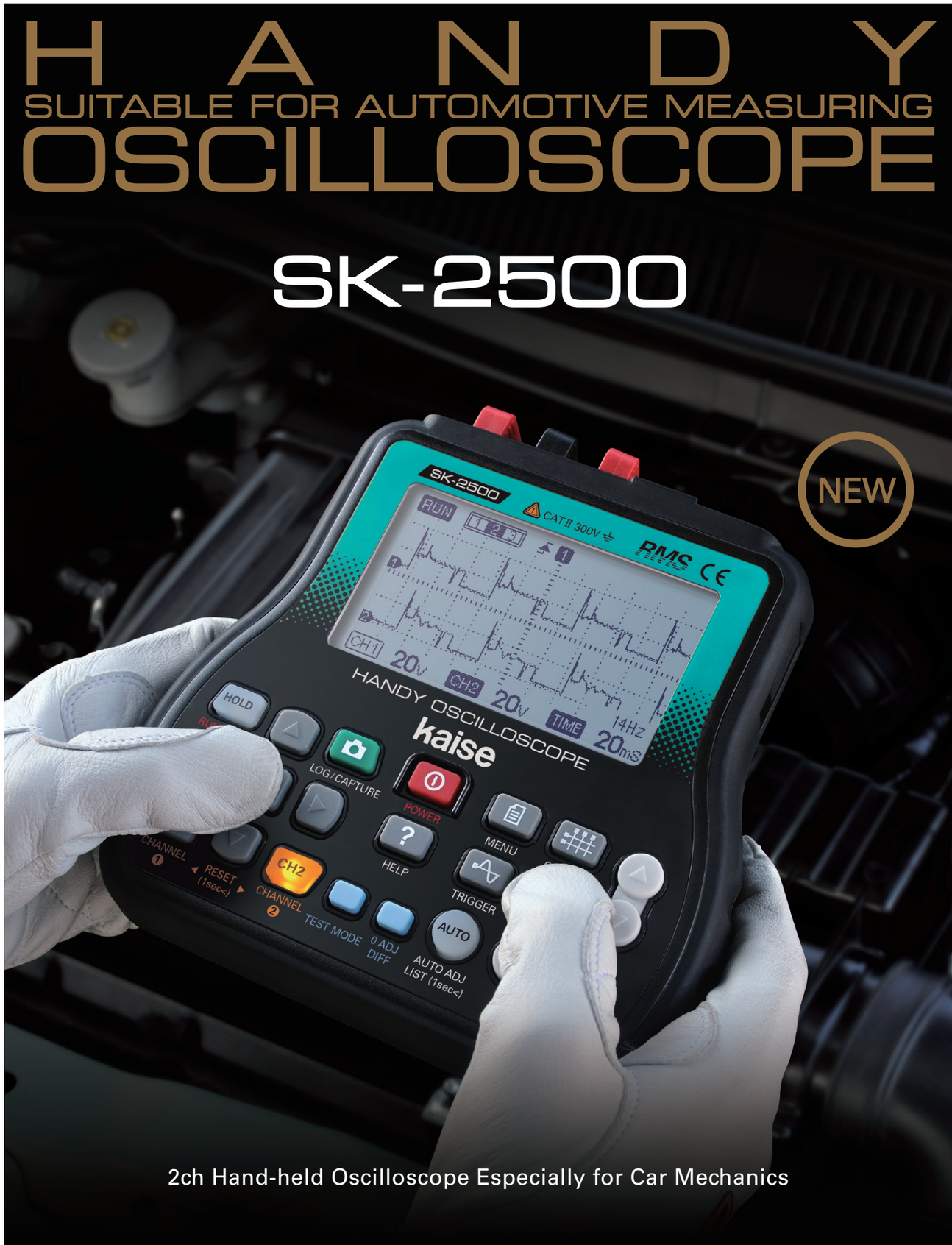


2ch Hand-held Oscilloscope Especially for Car Mechanics

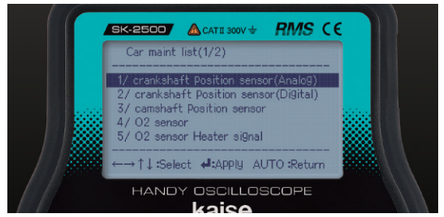
Waveform Observation for Car Maintenance!

Equipped with Sufficient Function and High Usability.
Focusing on Ruggedness and Simplicity of Use.

Ideal Waveform Observation Tool for Car Mechanics with User-Friendly Design, Usage, and Functions!

Car Maintenance List - The Auto Set Function for Car Sensors and Signals

The most complicated thing to get the observable waveform with oscilloscope is the settings of voltage axis, time axis, and trigger. SK-2500 makes it easier by providing “Car Maintenance List”. Just choosing the sensor or signal to be measured, the instrument automatically adjusts the waveform and shows it on the screen.



Car maintenance list

Rubber Holster for Shock Protection and Improved Ruggedness

Standard oscilloscopes tend to be slippery due to its plastic chassis, and careful handling is required.
SK-2500 added rugged solution for hand-held oscilloscope with slip-proof rubber holster. This also offers stable placing even in the engine compartment.

Easy-to-Use Hand-Held Oscilloscope Without Special Accessories

SK-2500 can use as your daily tool, with oscilloscope, digital multimeter, and data logger in one single hand-held unit. Test probes and accessories are common with our other test & measurement products for enhanced usability.

Usable : 100-41 Test Lead Kit, 100-62 Test Lead Set


100-41 Test Lead Kit (option)

Large-Sized Luminous Key Switches with Simple Operation

Feeling difficulties in complicated key operation for using oscilloscope?
Key switches of SK-2500 offers intuitive operation with illumination function, pictorial indications, and guide icons on the screen.

Key switches with illumination function

Digital Multimeter Function in DMM Mode

AC/DC Voltages, Resistance, Continuity, Frequency, Pulse Width, Duty Cycle, and Temperature measurements.

DMM mode (2ch measurement possible)

Auto Axes Adjustment

Auto Adjustment for voltage and time axes.

AC/DC Adapter Powering

USB 5V output AC/DC adapter for continuous measurement. ※standard accessory

Temperature Measurement (with optional temperature probe)

Use the optional 818-02 Temperature Probe or other K-type thermocouple probes.

Help Function to Support Your Measurement

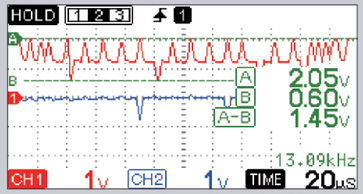
Press HELP Key when you have questions in the operation. Help lists with useful hints or tips are displayed on the screen.

HELP screen

2ch Waveform Display

Screen Capturing Saved as Image Data

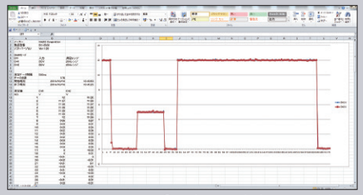
Screen capturing saved as PNG format is available just pressing CAPTURE Key. Captured data can be recalled from the menu list to view on the screen or to move to the PC. You can see the colored image data on PC screen.



Colored image (on PC screen)

Data Logger Function and Data Processing on PC

You can record the measuring data with Data Logger function and can send it to PC for using in spreadsheet software like making graphs. SK-2500 can store up to 99 CSV and PNG data.


Graph sample in spreadsheet

Cursor Function to Check the Waveform Precisely

Voltage, Time, Frequency, and Duty Cycle between the cursor can be measured.

Trigger Settings

Can set trigger positions, slope, and channel.

Trigger Hold Function

Will not miss out the sporadic waveform by freezing the screen when the measuring waveform comes up to the trigger level.

Backlight LCD

Easy reading even in dark environment.

With Soft Carrying Case

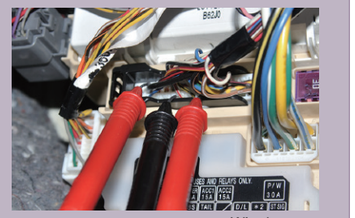
Measurement Example

■Waveform observation of cam and crank sensors in graph mode

※See maintenance manual when making the measurement.

①Insert the Input Plugs of Test Lead to Input Terminals. Turn on the instrument.
②Contact the Test Pins to the terminal to be measured. The below picture is getting the signal input from wire harness connector using 100-41 Test Lead Kit.


Insert the input plugs to the terminals


Wire harness

③Choose the item from Car Maintenance List. Auto set works for voltage / time axes, trigger, and waveform position to display camshaft position sensor waveform in CH1.
④Adjust voltage axis and waveform position to make space for CH2 waveform.
⑤Press CH2 Key. Crankshaft position sensor waveform is displayed on the screen. Adjust the voltage axis to be the same as CH1 and adjust the waveform position.

■Battery voltage measurement in DMM mode

①Insert the Input Plugs of Test Lead to Input Terminals. Turn on the instrument.
②Press TEST MODE Key to go to DC Voltage measurement in DMM mode.
③Contact the test pins to battery terminals (red pin to plus terminal, and black pin to minus terminal).
④Read the measurement result on the screen.

2ch test for battery voltage and alternator current

※Optional 660 AC/DC Clamp Adapter is required.


Graph mode

DMM mode