

kaise

NEW LOW CURRENT DC CLAMP METER

SK-7830

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CE



LOW CURRENT DC CLAMP,
For Car Maintenance

Quick! Easy!
Just Clamping-On!

- ❖ 4000mA DC Range
- ❖ Power-On Initialize (Automatic zero-adjustment function)
- ❖ Newly-Developed External-Noise-Preventable Core Mechanism



SK-7830

Patent Pending

Focused on Current Measurement in Car Maintenance.

Quick and Easy Dark Current Measurement Just Clamping-On.

For Car Maintenance

Wide range of DC current measurement is possible from 4000mA to 200A range.



Power-On Initialize

Automatic Zero-Adjustment function to adjust LCD indications into 0±1 digit when powered on.

Stable Reading

Even in low current measurement, SK-7830's LCD reading is always stable.

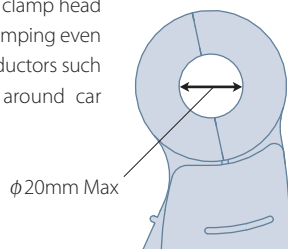
Generally, low current measurement value is hard to read due to its instability. SK-7830 solved this problem by its own internal processing system to minimize reading-instability.

Newly-Developed External-Noise-Preventable Core Mechanism

Shielded clamp core prevents external noise or effect of external magnetic field.

Small-Sized Clamp Head

SK-7830's small clamp head assures easy clamping even for narrow conductors such as the cables around car engine.



Display Hold

Enables to hold LCD indications. Effective to confirm measurement values as necessary.

Difference Measurement

Relative measurement function. Just pushing 0 ADJ (DIFF) key, convert a measurement value into zero and indicate relative values.

Auto Power Off

Power turns off automatically after a lapse of following minutes.

4000mA range : Approx. 5 minutes

40A/200A range : Approx. 10 minutes

CE Marking Approved

CAT III 300V, CAT I 600V

Car Measurement with SK-7830

Dark Current Measurement

Dark Current : mA-level low current that is used after turning off the engine by such as car security system or audio settings back-up. Too much dark current causes battery runs out, but its measurement was difficult. SK-7830 solved this problem and make it quick and easy.

- 1 Leave the engine turned off for about 15 minutes. All electric components (headlights or lamps) must be turned off.
- 2 Clamp-on a minus cable of car battery.
- 3 Read the measurement value. If it is higher than the specified value, check 1 once again.



Car Alternator's Charging Current Measurement

Car Alternator : Engine generator that outputs DC electricity. Measuring its charging current is effective to find the trouble that might cause battery runs out or battery damages.

- 1 Clamp B-terminal cable from car alternator.
- 2 Start the engine.
- 3 Alternator has no problem if 20A to 40A is displayed first, and then it slowly becomes lower.



accuracy at 23°C ± 5°C, <80% RH in non-condensing

Model	SK-7830	
DC Current	Range	Accuracy
	Manual - ranging (4000mA)	±1.5%rdg±5dgt (from 5mA)
	Auto - ranging (40A/200A)	(0 to 100A) ±1.5%rdg±5dgt
	200.0A	(101 to 200A) ±3.0%rdg±5dgt
Functions	Power-On Initialize, Display hold, Zero adjustment, Difference measurement, Auto power off	
Display (LCD)	4000 count, Maximum reading 4050, 12mm high	
Operating Principle	ΣΔ conversion	
Sampling Rate	64 times / second (Display : 1 time/second)	
Range Selection	Manual-ranging(4000mA), Auto-ranging(40A/200A)	
Polarity	Auto-Polarity ("—" indication in minus)	
Overload Indication	"OL" indication blinks	
Battery Warning	"BAT" indication at approx. 2.3V or less	
Display Hold	Hold indicating values by DH Key	
Zero-Adjustment (Difference Measurement)	Adjust LCD into 0±1 digit and/or start Difference Measurement by 0 ADJ (DIFF) Key.	
Auto Power Off	Power turns off automatically after approx. 5 minutes ; 4000mA range, or after approx. 10 minutes ; 40A/200A range.	
Overload Protection	400A AC/DC rms for 1 minute (50/60Hz)	
Dielectric Strength	3.54kV AC, 50Hz sine wave, for 1 minute (between iron core and case)	
Operable Temperature & Humidity	0°C to 40°C, 80%RH or lower in non-condensing.	
Storage Temperature & Humidity	-20°C to 60°C, 70%RH or lower in non-condensing.	
Temperature Coefficient	Accuracy in 23°C ± 5°C × 0.1%/°C	
Safety Level	CE Marking approved (IEC-61010-1, CAT III 300V, CAT I 600V and EMC Test passed)	
Power Supply	1.5V R6P (AA) batteries × 2	
Power Consumption	26mA max.	
Continuous Operating Time	Approx. 60 hours (Alkaline cell), Approx. 30 hours (Manganese cell)	
Conductor Diameter	φ20mm max.	
Dimensions & Weight	203(H) × 61(W) × 30(D)mm, Approx. 230g (including batteries)	
Accessories	1011 Carrying Case, 1.5V R6P (AA) batteries × 2, Instruction Manual	

DISTRIBUTOR

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5-2. DC CURRENT MEASUREMENT (mA / A) ⚠

⚠ WARNINGS

- Do not measure any current that might exceed maximum input value (200A DC / 600V line).
- Read 「3. SAFETY PRECAUTIONS」 carefully to avoid electric shock hazard and serious damage to the instrument.
- Do not twist clamp head while measurement. Measurement should be incorrect if any pressure is applied to the clamp head.
- Do not touch any part of power line or the circuit to be measured.

- Set **FUNCTION** Switch to "4000mA" or "40A/200A".
NOTE : Do not touch trigger nor open clamp head until POWER-ON INITIALIZE is completed and LCD indicates 0±1 digit.
- Open clamp head 15mm or wider and close it softly. Detach fingers from trigger after clamping a conductor.
- Read the measurement value on LCD.
NOTE : 4000mA range needs a few seconds until LCD indications become stable.
- After measurement, unclamp from the conductor and set **FUNCTION** Switch to "OFF".

Supporting Functions :

Zero-Adjustment, Difference Measurement, Display Hold (Refer to 4-5 and 4-6).

NOTES : Following instructions are important to take an accurate measurement.

- When taking measurement in 4000mA range, to reduce geomagnetic effect to the measurement, zero adjustment by POWER-ON INITIALIZE must be taken just in front of a conductor to be clamped, fixing the clamp head angle on measuring position.
NOTE : LCD indication may not return to 0mA by geomagnetic effect if changing clamp head angle after measurement taking clamp head away from a measured conductor.
- When measuring low current at 1000mA or lower, take zero adjustment by POWER-ON INITIALIZE for every measurement.
- LCD indication may not return to "0" by magnetic effect, if high current is instantaneously applied during high current measurement at 100A or higher, or regular measurement in each range.
- Under 4000mA range measurement, ±15mA current fluctuation from measuring value is not displayed on LCD by internal control.
- Zero-point fluctuation occurs depending on temperature alteration of measurement environment that could cause LCD indication not to return to "0" or large measurement deviation.

● MEASUREMENT EXAMPLE 1. Automobile Dark Current Measurement

Dark Current :

mA-level low current that is used after turning off the engine by such as car security system or audio settings back-up. Too much dark current causes battery runs out, but its measurement was difficult. SK-7830 solved this problem and make it quick and easy.

- Leave the car engine turned off for about 15 minutes after setting battery cable into the measurable condition. All electric components such as door lamp, room lamp, and headlight must be turned off. Lock the all doors if measuring car has remote-control door lock function.
NOTE : Leaving time is different depending on the car functions, especially for the cars that ECU or other electric components keep working for a certain period of time after turning off the engine, or have LCD fuel meter.

⑤

NOTE : Cool down the engine before measurement, in case that measuring cable is close to the engine.

- Put the clamp head close to a battery cable to be measured. Set **FUNCTION** Switch to "4000mA" without touching the trigger. POWER-ON INITIALIZE works to adjust LCD display into "0" automatically. (Refer to fig. 3)



- Clamp-on a minus cable of car battery.
- Read the measurement value on LCD.
NOTE : The values should be minus (-) if the current flows opposite direction of "⇒" mark on clamp head.
- If measurement value is higher than the specified value, check if any of car lamps remain lighting.
NOTE : The specified dark current value becomes different if the optional electric components such as car navigation or security equipments are attached. In that case, refer to their user's manuals for details.

● Example of Incorrect Measurement

- Turn the power on with clamp head opened.

POWER-ON INITIALIZE does not work properly.



fig.5

- Start measurement as soon as engine stopped.

Measurement value should be incorrect.
NOTE : Especially for the cars that ECU or other electric components keep working for a certain period of time after turning off the engine, or have LCD fuel meter.



fig.6

- Start measurement with any of car lamps remain lighting.

Cannot measure dark current. Turn the all lamps off.



fig.7

● MEASUREMENT EXAMPLE 2. Measurement of Car Alternator's Charging Current

Car Alternator :

Automobile engine generator that outputs DC electricity. Measuring its charging current is effective to find the trouble that might cause battery-runs-out or battery-damages.

- Stop the car engine.
- Set **FUNCTION** Switch to "40A/200A".
Be sure not to touch trigger. (Refer to fig. 8)
- Clamp-on B-terminal cable from car alternator.



fig.8

- Start the engine, and read the measurement value on LCD.
NOTE : The value should be minus (-) if the current flows opposite direction of "⇒" mark on clamp head.
- Alternator has no problem if 20A to 40A is displayed first, and then it slowly becomes lower.
- Alternator should be defective if no value is indicated, or high current value remains indicated.

6. MAINTENANCE

6-1. BATTERY REPLACEMENT

⚠ WARNING

To avoid electrical shock, detach instrument from circuit when to replace battery. Set **FUNCTION** Switch to "OFF".

Replace the batteries when "BAT" lights up on LCD.

- Turn the power off.
- Unscrew the Battery Cover and remove exhausted batteries.
- Insert 2 of new 1.5V R6P (AA) batteries in correct polarity.
- Fix battery Cover and tighten the screw.

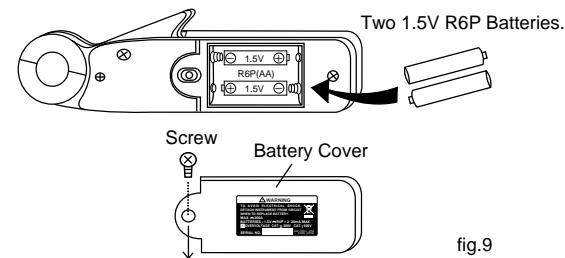


fig.9

6-2. PERIODICAL CHECK AND CALIBRATION

Periodical check and calibration is necessary to make safety measurements and to maintain the specified accuracy. The recommended check and calibration term is once a year and after the repair service. This service is available at KAISE AUTHORIZED SERVICE AGENCY through your local dealer.

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6-3. REPAIR

Repair service is available at KAISE AUTHORIZED SERVICE AGENCY through your local dealer. Pack the instrument securely with your name, address, telephone number and problem details, and ship prepaid to your local dealer.

Check the following items before asking repair service.

- Check the battery connection, polarity, and capacity ("BAT" lights up or not).
- Confirm that **FUNCTION** Switch is set to the correct position.
- Confirm that measured accuracy is adopted in the operating environment.
- Confirm that the body of this instrument has no cracks or any other damages.

WARRANTY

SK-7830 is warranted in its entirety against any defects of material or workmanship under normal use and service within a period of one year from the date of purchase of the original purchaser. Warranty service is available at **KAISE AUTHORIZED SERVICE AGENCY** through your local dealer. Their obligation under this warranty is limited to repairing or replacing SK-7830 returned intact or in warrantable defect with proof of purchase and transport charges prepaid. **KAISE AUTHORIZED DEALER** and the manufacturer, **KAISE CORPORATION**, shall not be liable for any consequential damages, loss or otherwise. The foregoing warranty is exclusive and in lieu of all other warranties including any warranty of merchantability, whether expressed or implied. This warranty shall not apply to any instrument or other article of equipment which shall have been repaired or altered outside of **KAISE AUTHORIZED SERVICE AGENCY**, nor which have been subject to misuse, negligence, accident, incorrect repair by users, or any installation or use not in accordance with instructions provided by the manufacturer.

KAISE AUTHORIZED DEALER

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Product specifications and appearance are subject to change without notice due to continual improvements.

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