



## FEATURES

- ◆ Easy Operation and Reading !
- ◆ AC/DC Voltage, Frequency, Duty Cycle !
- ◆ Resistance, Continuity, Diode, Capacitance !
- ◆ MAX/MIN, Difference and Display Hold !
- ◆ AUTO POWER OFF : Prevents battery consumption !
- ◆ Safety Design : CE IEC61010-1 CATⅢ600V and EMC !

### ◆ Measurements

AC/DC Voltage

Frequency

Duty Cycle

Resistance

Continuity Tests

Diode Tests

Capacitance

### ◆ Functions

Max / Min

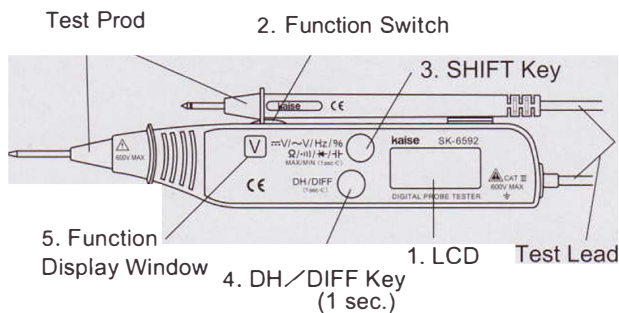
Difference

Display Hold

Auto Power Off

## GENERAL SPECIFICATIONS

- DISPLAY :**
  - Numerical Display :** 4000 count LCD, 8mm high.
  - Units and Symbols :** mV, V, Hz, %,  $\Omega$ , k $\Omega$ , M $\Omega$ , nF,  $\mu$ F,  $\mu$ s,  $\mu$ s,  $\mu$ s, DIFF, MAX, MIN, BAT, DH, OL, AUTO, APO,  $\approx$ ,  $\sim$ ,  $-$  and dicimal point.
- OPERATING PRINCIPLE :**  $\Sigma \Delta$ .
- RANGE SELECTION :** Autoranging.
- SAMPLING RATE :** 2 times per second.
- POLARITY :** Autopolarity,  $-$  symbol when minus.
- OVERRANGE INDICATION :** OL symbol appears.  
(excluding DC/AC 600V)
- DISPLAY HOLD / DIFF (Zero Adjustment) :**
  - Display Hold :** Press DH / DIFF Key for less than 0.5 second.
  - Difference Measurement :** Press DH / DIFF Key for more than 1 second.
  - Zero Adjustment :** Press DH / DIFF Key for more than 1 second same as above before measuring Capacitance.
- MAX / MIN Value :** When measuring  $\approx$  V,  $\sim$  V,  $\Omega$ , press SHIFT Key for more than 1 second.
- BATTERY WARNING :** BAT symbol appears when battery voltage goes down below approx. 2.4V.
- OPERATING TEMPERATURE & HUMIDITY :** 0°C to 40°C, less than 80%RH in non-condensing.
- STORAGE TEMPERATURE & HUMIDITY :** -20°C to 60°C, less than 80% RH in non-condensing.
- POWER SUPPLY :** One 3V CR2032 Battery.
- POWER CONSUMPTION :** 4.5mW typically.
- BATTERY LIFE :** 70 hours continuous operation.
- AUTO POWER OFF :** Power turns off automatically in 15 minutes after any switch operation.
- DIELECTRIC STRENGTH :** 5.55kV rms for one minute between Input Terminal and Cases.
- OVERLOAD PROTECTION :**
  - V : 900V DC or AC rms max. for 1 minute.  
(400mV Range is 600V rms)
  - $\Omega$  /  $\mu$ s /  $\mu$ s /  $\mu$ s : 300V rms max. for 1 minute.
- DIMENSIONS & WEIGHT :** 179(H) x 28(W) x 20(D)mm, 60g
- SAFETY LEVEL :** IEC-61010-1 Overvoltage CAT. III 600V and EMC Test passed.
- ACCESSORY :** One Black Test Lead, Battery (Installed), Carrying Case, Instruction Manual
- OPTIONAL ACCESSORY :** 940 Alligator Clips.



## MEASUREMENT SPECIFICATIONS

(23°C ± 5°C, less than 80% RH in  
1. DC Voltage ( $\approx$  V) non-condensing)

Range	Accuracy	Resolution	Input Impedance	Max Input Voltage
400.0mV	±0.5%rdg±3dgt	100 $\mu$ V	$\approx$ 100M $\Omega$	600V DC
4.000 V		1mV	$\approx$ 11M $\Omega$	
40.00 V		10mV	$\approx$ 10M $\Omega$	
400.0 V	±1.0%rdg±3dgt	100mV	$\approx$ 10M $\Omega$	
600 V		1 V		

Overload Protection : 900V rms for 1 minute

### 2. AC Voltage ( $\sim$ V)

Range	Accuracy	Resolution	Input Impedance	Max Input Voltage
4.000 V	+1.5%rdg±5dgt	1mV	$\approx$ 11M $\Omega$	600V rms
40.00 V		10mV	$\approx$ 10M $\Omega$	
400.0 V		100mV	$\approx$ 10M $\Omega$	
600 V	1 V	1 V	$\approx$ 10M $\Omega$	

Overload Protection : 900V rms for 1 minute

Frequency Response : 50Hz ~ 400Hz

### 3. Frequency ( Hz )

Range	Accuracy	Resolution	Input Sensitivity	Max. Input Voltage
1.000Hz ~100.0kHz	±0.2%rdg ±2dgt	0.001Hz ~100Hz	3V RMS	600V rms or 2 x 10 <sup>6</sup> V Hz

### 4. Duty Cycle (%)

Range	Accuracy	Resolution	Input Sensitivity	Max. Input Voltage
0.0% ~99.9%	±0.5%rdg±5dgt	0.1%	3V RMS	600V rms

Frequency Scope : 1Hz ~ 1kHz

### 5. Resistance ( $\Omega$ )

Range	Accuracy	Resolution	Test Current	Open Circuit Voltage
400.0 $\Omega$	±1.5%rdg±4dgt	0.1 $\Omega$	$\leq$ 0.2mA	$\approx$ 0.44V
4.000k $\Omega$		1 $\Omega$	$\leq$ 50 $\mu$ A	
40.00k $\Omega$	±1.0%rdg±3dgt	10 $\Omega$	$\leq$ 5 $\mu$ A	
400.0k $\Omega$		100 $\Omega$	$\leq$ 0.5 $\mu$ A	
4.000M $\Omega$	±3.0%rdg±3dgt	1 k $\Omega$	$\leq$ 50nA	
40.00M $\Omega$		10 k $\Omega$		

Overload Protection : 300V rms

### 6. Continuity Tests ( $\cdot$ )

Range	Buzzer Sound	Response Time	Open Circuit Voltage	Overload Protection
400.0 $\Omega$	less than 60 $\Omega$	1m sec	$\approx$ 0.44V	300V rms

### 7. Diode Tests ( $\blacktriangleleft$ )

Range	Accuracy	Open Circuit Voltage	Test Current	Overload Protection
1.000V	±5.0%rdg±3dgt	$\leq$ 1.7V	$\leq$ 0.7mA	300V rms

### 8. Capacitance ( $\text{H}$ )

Range	Resolution	Accuracy	Test Voltage
50.00nF	10pF	±5.0%rdg±10dgt	$\leq$ 1.7V
500.0nF	100pF		
5.000 $\mu$ F	1nF		
50.00 $\mu$ F	10nF		
100.0 $\mu$ F	100nF		

Overload Protection : 300V rms



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