TOS8830/8040/8030

Hipot and Insulation Resistance Tester

For use in production and inspection lines

The model TOS8830,TOS8040,TOS8030 are the hipot and insulation resistance testers developed by KIKUSUI, an international brand in the field of electrical safety testers, and are designed specifically for use in production and inspection lines in factories and plants. While retaining the high levels of quality and reliability inherent to our products, these testers are geared to provide what manufacturers want - compactness, light weight, and reasonable price.

TOS8830

Hipot and insulation resistance tests in one model supporting the standard tests

- Hipot: AC 4kV/100 mA
- Transformer capacity: 500VA
- Insulation resistance: 500V/999.9 MΩ
- The voltmeter provides a 3-digit digital display.
- The insulation resistance meter provides a 4-digit digital display.
- The window comparator method is adopted for judgment.
- Remote control function
- Output of contact point signals such as PASS and FAIL
- Digital timer adjustable to 1 to 99 seconds

TOS8040

Hipot tester supporting standard tests

- Hipot: AC 4kV/100 mA
- Transformer capacity: 500VA
- The voltmeter provides a 3-digit digital display.
- The window comparator method is adopted for judgment.
- Remote control function
- Output of contact point signals such as PASS and FAIL
- Digital timer (0.5 to 9.9 s; 1 to 99 s, Resolution: 0.1 s)

TOS8030

Compact model for the simplified test

- Hipot: AC 3kV/100 mA
- Compact and lightweight (approx. 6 kg)
- Digital timer (0.5 to 9.9 s; 1 to 99 s, Resolution: 0.1 s)
- Judgment range: 0.1 mA to 10 mA
- Zero turn-on switch
- Safety-conscious high-voltage output terminal and large DANGER lamp
- Remote control function
- Output of contact point signals such as PASS and FAIL

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TOS8830/8040/8030

Hipot and Insulation Resistance Tester

The specifications are based on the following conditions and settings, unless otherwise specified.
• Warm-up time: 30 minutes • Temperature: 5°C to 35°C • Relative humidity: 20% to 80% (with no dew condensation)
• "xx% of reading" represents xx% of voltmeter (or resistance meter) reading.

Hipot test mode

Item	TOS8830	TOS8040	TOS8030
Output block			
Output voltage range	0.05 kV to 4.00 kV/single range		0.05 kV to 3.00 kV/single range
Maximum rated load (*1)	400 VA (4 kV/100 mA) (at an input voltage of 220V, Transformer capacity 500VA)		30 VA (3 kV/10 mA) (at a nominal input rating)
Output voltage waveform (*2)	AC line waveform		
Voltage regulation	10% or less (during transition from the maximum rated load to no-load,models for a nominal input rating of 220 V) 15% or less (during transition from the maximum rated load to no-load,models for a nominal input rating of 120 V or 100 V)		20% or less (during transition from the maximum rated load to no-load)
Switching	A zero-start switch is used.		
Voltmeter			
Measurement range	0.00 kV to 5.00 kV(Display resolution : 10 V)		0.00 kV to 4.00 kV (Display resolution : 10 V)
Accuracy	± 1.5% full scale or Vm ≥ 1.00 kV: ± (2% of reading +10 V) Vm < 1.00 kV: ± (2% of reading +20 V) – whichever is smaller.where FS: full scale (5.00 kV), Vm: measured voltage value		± 1.5% FS or Vm ≥ 1.00 kV: ± (5% of reading), Vm < 1.00 kV: ± (5% of reading + 30 V) – whichever is smaller.where FS: full scale (4.00 kV), Vm: measured voltage value
Response	Mean value response/rms value indication		
Judgment function			
Judgment method	Compares the reference values and measured leakage current using a window comparator. The result is returned as a PASS or FAIL.		Compares the reference values and measured leakage current. The result is returned as a PASS or FAIL.
Upper reference limit	1/2/4/8/10/25/100 mA, 7 ranges May be set from 1 mA to 50 mA in 1 mA steps by a combination.		x0.1 mA range: Can be set from 0.1 mA to 9.9 mA in 0.1 mA steps. x1 mA range: Can be set from 1 mA to 11 mA in 1 mA steps.
Lower reference limit	Continuously variable from 0 to 1/2 of the upper reference limit		-
Judgment accuracy (*3)	± (5% + 20 µA) with respect to the upper reference limit,± 20% with respect to the lower reference limit (*4)		Iref ≥ 1 mA: ± (5% + 20 µA), Iref < 1 mA: ± (5% + 40 µA) Iref: Reference value
Time			
Test time	1 s to 99 s (the TIMER off function provided), Resolution : 1 s, Accuracy : -0 ms, +50 ms	x0.1 s range: 0.5 s to 9.9 s, x1 s range: 1 s to 99 s (The TIMER OFF function provided) , Resolution : x0.1 s range: 0.1 s, x1 s range: 1 s , Accuracy : -0 ms, +50 ms	

***1 : Time limitations on the output**
The heat radiation capacity of the output voltage generator section of the tester is designed to be 1/2 of the rated output, in consideration of the instrument dimensions, weight, costs, and other factors.The tester, therefore, must be used under the following time constraints (interval time and output time). If used beyond these limits, the output section may overheat, activating the internal protection circuit. In such cases, always halt testing for a duration equal to or greater than the test duration.

***2 : Test voltage waveform**
If AC voltage is applied to a capacitive load, the output voltage in certain cases may rise above the value at no-load, depending on the value of the capacitive element of the load. Moreover, for samples whose capacitance values show voltage dependency (as with ceramic capacitors), waveform distortions may result. However, for a test voltage of 1.5 kV, the effects of a capacitance of 1000 pF or less may be ignored.

*3 : In an AC hipot test, a current also flows in stray capacities such as measurement leads and devices. The approximate current values flowing in these stray capacities are as shown in the table below.

*4 : When the lower reference value is 1/2 of the upper reference limit (i.e., the variable resistor is turned fully clockwise). No calibration is made for other values.

Insulation Resistance Tester

Item	TOS8830
Output section	
Rated output voltage	-500 Vdc
Accuracy	$-(500^{+20}_{-0})$ Vdc
Maximum rated load	0.5 W (-500 V / 1 mA)
Resistance meter	
Effective measurement range	0.50 MΩ- 999.9 MΩ
Accuracy	Rm < 20 M Ω : ±(5 % of reading) Rm ≥ 20 M Ω : ±(10 % of reading) Rm: measured insulation resistance value

Item	TOS8830
Judgment function	
Judgment method	Compares the reference values and measured resistance using a windowcomparator. The result is returned as a PASS or FAIL.A reference value can be independently set for the upper and lower limits.
The value set for the upper reference limit	Any of the following 33 values is valid, to a value ranging from 0.50 MΩto 999.9 MΩ.
The value set for the lower reference limit	
Time	
Test time	1 s to 99 s (the TIMER off function provided)Resolution : 1 s
Accuracy	-0ms, +50 ms

Other Functions / General Specifications

Item	TOS8830	TOS8040	TOS8030
Remote control			
Connector	5-pin DIN connector on the front panel		5-pin DIN connector on the rear panel
Optional devices connectable	Remote control boxes: RC01-TOS and RC02-TOS / High-voltage test probes: HP01A-TOS and HP02A-TOS		
Signal I/O			
Connector (Status signal output)	14-pin screw-less terminal on the rear panel (Output of a READY signal / H.V ON signal / PASS signal / FAIL signal/ PROTECTION signal)		

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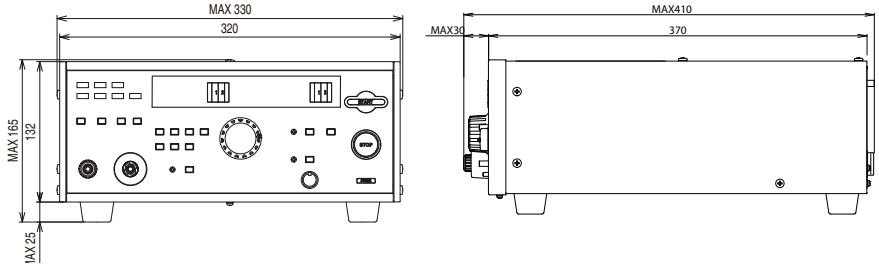
Hipot and Insulation Resistance Tester

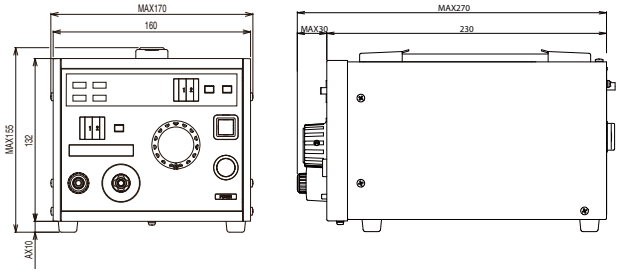
Item	TOS8830	TOS8040	TOS8030
Environment			
Operation environment	Indoor use, Altitude : Up to 2000 m		
Temperature	Specificationsassured range : 5°C to 35°C, Operating range : 0°C to 40°C, Storage range : -40°C to 70°C		
Relative humidity	Specificationsassured range, Operating range : 20% to 80% (with no dew condensation), Storage range : 90% or less (with no dew condensation)		
General Specifications			
Nominal input rating (Input voltage range)	220 V(200 V to 240 V),120 V(110 V to 130 V), or 100 V(90 V to 110 V), 50 Hz or 60 Hz		
Power consumption	At no-load (in READY state) 50 VA or less		
At rated load	650 VA maximum		45 VA maximum
Insulation resistance	AC INPUT to chassis 30 MΩ or more (at 500 Vdc)		
Withstand voltage	AC INPUT to chassis 20 mA or less when 1390 Vac is applied for 2 seconds		AC INPUT to chassis 10 mA or less when 1390 Vac is applied for 2 seconds
Ground bond	25 Aac/0.1 Ω or less		
Dimensions (maximum)	320 (330) W x 132 (165) H x 370 (410) Dmm		160 (170) W x 132 (155) H x 230 (270) D mm
Weight	Approx. 18 kg(models for a nominal input rating of 220 V) Approx. 21 kg(models for a nominal input rating of 120 V or 100 V)	Approx. 17 kg(models for a nominal input rating of 220 V) Approx. 21 kg(models for a nominal input rating of 120 V or 100 V)	Approx. 6 kg
Standard accessories	High-voltage test leads TL01C-TOS (approx. 1.5 m): 1 set , Power cord: 1 , INTERLOCK jumper: 1 , Operation Manual: 1 copy		

External dimensional diagrams

TOS8830/8040



TOS8030



Unit: mm

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