

# TOS5101

## WITHSTANDING VOLTAGE TESTER



AC/DC

10 kV

Transformer Capacity: 500 VA

### Outline

The Model TOS5101 is a withstanding voltage tester having a high test voltage of 0 to 5 kV or 0 to 10 kV (transformer capacity: 500 VA) that allow both application of AC and DC. The use of a high luminance, large fluorescent display tube for the display enables data including measured values, status and judgement results to be extremely legible in comparison with previous models.

The Pass/fail function employs a window comparator method that enables TOS5101 to make fail judgement of current leakage over the upper reference value and below the lower reference value set on the front panel. Thus, highly reliable testing can be performed including that for test lead disconnection and defective contact. By employing the remote control function for start and stop operations and using this function with the judgement result output function enables greater automation and efficiency of testing.

In addition, in order to prevent erroneous operation and accidents, the TOS5101 is also equipped with a key lock function and interlock function, a high-voltage output terminal having a narrowed insertion port, a large DANGER lamp, and an automatic discharge function (during DC operation) that removes charge from the testpiece. These features give the TOS5101 a high degree of safety and reliability.

### Features

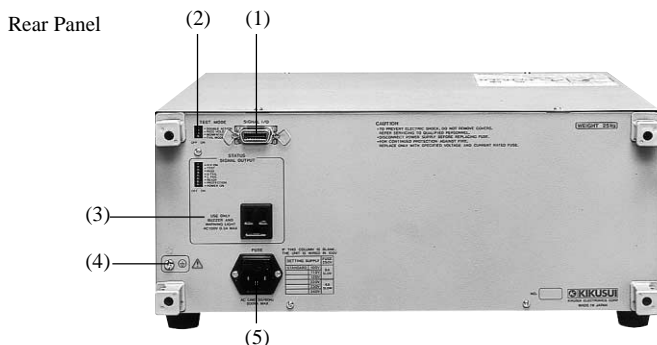
- Complies with various safety standards
- AC/DC output (0 to 10 kV)
- Large color display
- Digital voltmeter and ammeter
- Digital timer
- Window comparator type employed for Pass / fail judgement.
- Equipped with remote control function
- Various signal outputs
- Automatic discharge function (during DC operation)
- Provided with zero turn-on switch
- Compact size (roughly 1/2 of our previous product)



A high-luminance, fluorescent display tube is employed for display of settings, status and judgement results.

### Specifications

<p>■ Test Voltage</p> <p>Applied Voltage</p> <p>Maximum Rated Output</p> <p>Wattage Rating</p> <p>Waveform</p> <p>Voltage Regulation</p>	<p>AC and DC</p> <p>0 to 5/0 to 10 kV</p> <p>AC: 500VA/10 kV, 50 mA (note 1)</p> <p>DC: 50W/10kV, 5 mA (note 1)</p> <p>500 VA</p> <p>Commercial line waveform</p> <p>AC: Max. 15% (for max. rated load to no load)</p> <p>DC: Max. 3% (for max. rated load to no load)</p>
<p>Switching</p> <p>Ripple (DC)</p>	<p>Use of a zero turn-on switch</p> <p>100 Vp-p typ. at 10 kV, no load</p> <p>200 Vp-p typ. at max. rated output</p>
<p>■ Output Voltmeter</p> <p>Scale</p> <p>Accuracy</p>	<p>Analog: 10 kV full scale, AC/DC</p> <p>Analog: <math>\pm 5\%</math> of full scale</p> <p>Digital: <math>\pm 1.5\%</math> of full scale</p>
<p>AC Indication</p>	<p>Analog: Mean value response/rms value scale</p>
<p>Full Scale</p> <p>AC Response</p>	<p>Digital: 5 kV/10 kV full scale</p> <p>Digital: Mean value response/rms value display</p>
<p>■ Ammeter</p> <p>Accuracy</p>	<p>Digital: <math>\pm(5\% + 20\mu\text{A})</math> of upper cutoff current</p>
<p>AC Response</p>	<p>Digital: Mean value response/rms value display</p>
<p>■ Pass/fail Judgement Function</p> <p>Type of Judgement</p>	<p>Window comparator type</p> <ul style="list-style-type: none"> <li>● FAIL judgement           <ul style="list-style-type: none"> <li>*When current detected above upper cutoff current</li> <li>*When current detected below lower cutoff current (FAIL signal generated when FAIL judgement made)</li> </ul> </li> <li>● PASS judgement           <ul style="list-style-type: none"> <li>*When set time has elapsed and no abnormality is detected</li> </ul> </li> </ul>
<p>Upper Cutoff Current Setting Range</p> <p>Lower Cutoff Current Setting Range</p> <p>Judgement Accuracy</p> <p>Current Detection</p>	<p>AC: 0.1 to 55 mA</p> <p>DC: 0.1 to 5.5 mA</p> <p>AC: 0.1 to 55 mA</p> <p>DC: 0.1 to 5.5 mA</p> <p><math>\pm(5\%</math> of upper cutoff current + <math>20\mu\text{A})</math></p> <p>Integration of current absolute value followed by comparison with reference value</p>
<p>Calibration</p>	<p>With rms value of sine wave using a pure resistance load</p>
<p>No-load output voltage</p>	<p>Approx. 970V when set to 50 mA AC</p> <p>Approx. 160V when set to 5 mA DC</p>



<p>■ Test Time Setting</p> <p>Range</p> <p>Accuracy</p>	<p>0.5 to 999 sec (<math>\pm 10</math> ms) (timer-off function provided)</p> <p><math>\pm 20</math> ms</p>
<p>■ Signal Outputs</p>	<p>H.V ON - Open collector</p> <p>DANGER - Lamp</p> <p>TEST - Open collector, fluorescent display tube</p> <p>PASS - Open collector, fluorescent display tube, buzzer</p> <p>U FAIL - Open collector, fluorescent display tube, buzzer</p> <p>L FAIL - Open collector, fluorescent display tube, buzzer</p> <p>READY - Open collector, fluorescent display tube</p> <p>PROTECTION - Open collector, fluorescent display tube</p> <p>STATUS SIGNAL OUTPUT 100V AC (0.3 A Max.)</p> <p>Rating of open collector: 4.5 to 30V DC/400 mA (Max. Total)</p>
<p>■ Remote Control</p>	<p>Test and reset operations can be remote controlled in the following cases:</p> <ul style="list-style-type: none"> <li>● When using a separately sold remote control box</li> <li>● When using a separately sold high-voltage test probe</li> <li>● When controlling with a make contact signal such as a relay or switch</li> <li>● When using low active control by a logic device and so on</li> </ul>
<p>■ Interlock Function</p>	<p>Testing can no longer be performed when an interlock signal is input (PROTECTION state).</p>
<p>■ Line Voltage</p>	<p><math>100\text{V} \pm 10\%</math>, 50/60 Hz (note 2)</p>
<p>■ Power Requirements</p>	<p>Max. 50 VA under no-load conditions</p> <p>Approx. 610 VA at rated load</p>
<p>■ Dimensions (MAX)</p>	<p>430W <math>\times</math> 177H <math>\times</math> 370D mm</p> <p>(430W <math>\times</math> 195H <math>\times</math> 450D mm)</p>
<p>■ Weight</p>	<p>Approx. 21 kg (for line voltage of 100V)</p>
<p>■ Accessories</p>	<p>High-voltage test lead TL01-TOS (max. allowable voltage: 5 kV/1.5 m)</p> <p>High-voltage test lead TL03-TOS (max. allowable voltage: 10 kV/1.5 m)</p> <p>14-pin amphenol plug (assembled)</p>

Note 1: Continuous output time may be limited depending on current high limit reference value and ambient temperature.

Note 2: Nominal voltages of 110V, 120V, 220V, 230V and 240V available as factory options.

(1)Signal I/O

Input/output connectors for interlock function input/output signals, start/stop remote control input signals and status output signal.

(2)Test Mode Switch

This is a DIP switch for setting special test modes. Parameter settings such as test start and interruption operations can be changed with this switch.

(3)Status Signal Output Terminal

This is a 100V AC output terminal for operating an optional warning lamp unit or buzzer unit. Conditions during AC 100V output (status, judgement results) are set with DIP switches.

(4)Ground Terminal

(5)Line Input Terminal (integrated with fuse holder)