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# ELECTRICAL SAFETY TESTERS

Withstanding Voltage and Insulation Resistance Testers

Withstanding Voltage Testers

Insulation Resistance Testers

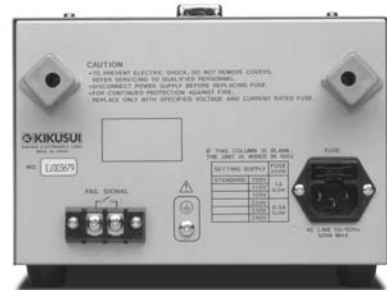
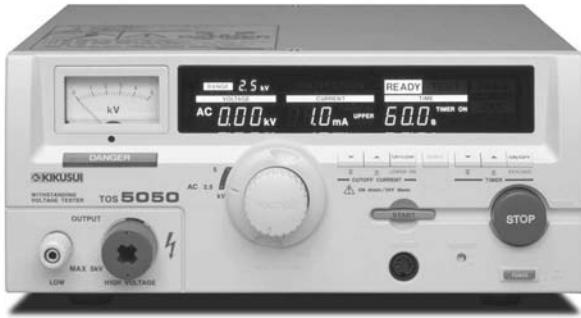
Earth Continuity Testers



**JQA-EM1176**  
**JQA-1100**  
Oscilloscopes  
Withstanding Voltage Testers  
Power Supply Equipment

# TOS5000 SERIES

Withstanding Voltage Tester



## TOS5051(AC/DC) TOS5050(AC)



**TOS5051** : outstanding performance on practical use, AC, DC output 5kV  
**TOS5050** : Top selling model for production line etc.

- Complies with various safety standards
- AC/DC output (TOS5051)
- 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 (TOS5051: during DC operation)
- Provided with zero turn-on switch

## TOS5030(AC)



**Reliable function on practicability and safety equipment enable it to be used easily for inspections of devices and testing of electronic components.**

The Model TOS5030 is an AC withstanding voltage tester having an AC output of 3 kV and 10 mA. Despite being an economy model, the TOS5030 is equipped with a zero turn-on switch, remote control function for start and stop operations and a FAIL signal output function.

- Compact size, light weight(approx. 4.8kg)
  - Economy model for simplified test
  - Provided with zero turn-on switch
  - Provided with remote control terminal
  - Featuring safety high voltage output terminal
- Large "DANGER" warning lamp

\*TOS5030 is for simplified test and does not comply with various safety standards.

# TOS5000 SERIES

Withstanding Voltage Tester

Item	TOS5101	TOS5051	TOS5050	TOS5030
<b>Output block</b>				
Applied Voltage	0 to 5/0 to 10 kV AC and DC	0 to 2.5/0 to 5 kV AC and DC	0 to 2.5/0 to 5 kV AC	0 to 3 kV AC
<b>AC</b>				
Maximum Rated*1	500VA / 10 kV, 50 mA	500VA / 5 kV, 100 mA		30VA / 3 kV, 10 mA
Waveform	Commercial line waveform			
Voltage Regulation	Max. 15% (for max. rated load to no load)			
Switching	Use of a zero turn-on switch			
<b>DC</b>				
Applied Voltage	50W / 10 kV, 5 mA	50W / 5 kV, 5 mA		
Ripple	100 Vp-p typ. at 10 kV, no load 200 Vp-p typ. at max. rated output	100 Vp-p typ. at 5 kV, no load 100 Vp-p typ. at max. rated output		
Maximum Rated*1	Max. 3% (for max. rated load to no load)			
<b>Output Voltmeters</b>				
<b>Analog</b>				
Scale	10 kV full scale, AC/DC	5 kV full scale, AC/DC	5 kV full scale, AC	3 kV full scale, AC
Type of Meter	JIS Class 2.5			
Accuracy	±5% of full scale			
AC Indication	Mean value response / rms value scale			
<b>Digital</b>				
Full Scale	5 kV/ 10 kV full scale	2.5 kV/ 5kV full scale		
Accuracy	±1.5% of full scale			
AC Response	Mean value response / rms value display			
<b>Ammeter</b>				
<b>Digital</b>				
Accuracy	±(5% + 20µA) of upper cutoff current			
AC Response	Mean value response / rms value display			
<b>Pass/fail Judgement Function</b>				
Type of Judgement	Window comparator type ● FAIL judgement *When current detected above upper cutoff current *When current detected below lower cutoff current (FAIL signal generated when FAIL judgement made) ● PASS judgement *When set time has elapsed and no abnormality is detected			FAIL judgement *When current detected above reference value *FAIL signal generated when FAIL judgement made
Upper cutoff current setting range	AC: 0.1 to 55 mA DC: 0.1 to 5.5 mA	AC: 0.1 to 110 mA DC: 0.1 to 11 mA	AC: 0.1 to 110 mA	AC: 0.5/1/2/5/10 mA
Lower cutoff current setting range	AC: 0.1 to 55 mA DC: 0.1 to 5.5 mA	AC: 0.1 to 110 mA DC: 0.1 to 11 mA	AC: 0.1 to 110 mA	
Judgement Accuracy	±(5% of upper cutoff current + 20µA)			±5% of preset cutoff current
Current Detection	Integration of current absolute value followed by comparison with reference value			
Calibration	With rms value of sine wave using a pure resistance load			
No-load output voltage	Approx. 970 V when set to 50 mA AC Approx. 160 V when set to 5 mA DC	Approx. 460 V when set to 100 mA AC Approx. 100 V when set to 10 mA DC		Approx. 400 V when set to 10 mA AC
Test Time Setting Range	0.5 to 999 sec (±10 ms) (timer-off function provided)			
Accuracy	±20 ms			
Line Voltage	100V±10%, 50/60 Hz (Nominal voltages of 110V, 120V, 220V, 230V and 240V available as factory options.)			
<b>Power Requirements</b>				
for line voltage of 100 V	Max. 50 VA under no-load conditions / Approx. 600 VA at rated load	Max. 50 VA under no-load conditions / Approx. 610 VA at rated load	Max. 25 VA under no-load conditions / Approx. 600 VA at rated load	Max. 10 VA under no-load conditions / Approx. 45 VA at rated load
for line voltage of 100 V to 200 V	Max. 50 VA under no-load conditions / Approx. 600 VA at rated load	Max. 50 VA under no-load conditions / Approx. 630 VA at rated load	Max. 25 VA under no-load conditions / Approx. 600 VA at rated load	Max. 10 VA under no-load conditions / Approx. 45 VA at rated load
for line voltage of 220 V to 240 V	Max. 50 VA under no-load conditions / Approx. 610 VA at rated load	Max. 50 VA under no-load conditions / Approx. 640 VA at rated load	Max. 25 VA under no-load conditions / Approx. 640 VA at rated load	Max. 10 VA under no-load conditions / Approx. 25 VA at rated load
EMC*2	Complied with the following standards IEC61362-1: 1997-03/A1: 1998-05 Electrical Equipment for Measurement, Control and Laboratory Use- EMC requirements Radiated Emissions Class A Conducted Emissions Class A IEC61000-4-2: 1995-01/A1: 1998-01 Electro-static Discharge IEC61000-4-3: 1995-02 Radiated, radio-frequency, electromagnetic field IEC61000-4-4: 1995-01 Electrical fast transient / Burst IEC61000-4-5: 1995-02 Surge IEC61000-4-6: 1996-04 Conducted disturbances IEC61000-4-11: 1994-06 Voltage dips, short interruptions and voltage variations Under following conditions 1. Used HV test leadwires which is supplied. 2. No discharge in testing 3. Used the shielded cable which length is less than three meters when the SIGNAL I/O is used.			
Safety*2	This instrument is designed to comply with the requirements of following standard for class I portable equipment and is for use in a pollution degree 2 environment. IEC61010-1: 1990-07/A2: 1995-07 Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use This equipment is designed to operate from overvoltage category II.			

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

\*2: Availability of CE Marked Products may be referred in page 4-5 for "Quick Reference"

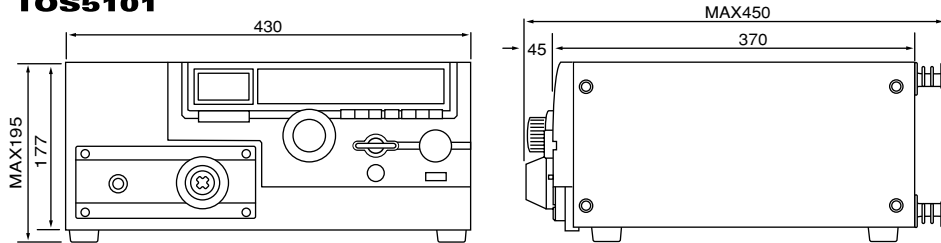
# TOS5000 SERIES

Withstanding Voltage Tester

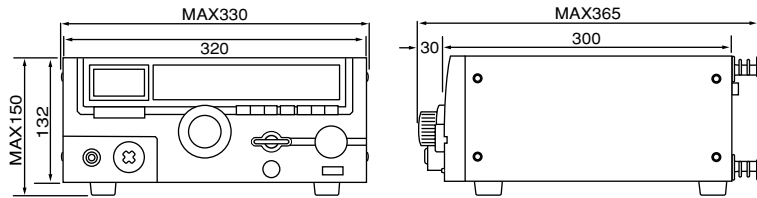
Item	TOS5101	TOS5051	TOS5050	TOS5030
Dimensions (MAX)	430W X 177(195)H X 370(450)Dmm	320W X 132(150)H X 300(365)Dmm		200W X 132(160)H X 215(280)Dmm
<b>Weight</b>				
for line voltage of 100 V	Approx. 21 kg	Approx. 16 kg	Approx. 15 kg	Approx. 4.8 kg
for line voltage of 100 V to 120 V	Approx. 23 kg	Approx. 18 kg	Approx. 17 kg	Approx. 5.8 kg
for line voltage of 220 V to 240 V	Approx. 24 kg	Approx. 19 kg	Approx. 18 kg	Approx. 5.8 kg
<b>Accessories</b>				
High-voltage test lead	TL01-TOS (max.allowablevoltage: 5 kV /1.5m) TL03-TOS (max.allowablevoltage: 10 kV /1.5m)	TL01-TOS (max.allowablevoltage: 5 kV /1.5m)		TL01-TOS (max.allowablevoltage: 5 kV /1.5m)
Others	14-pin amphenol plug (assembled)	14-pin amphenol plug (assembled)		5P DIN plug (assembled)

## External dimensional diagrams

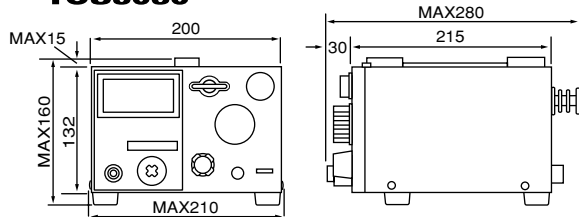
### TOS5101



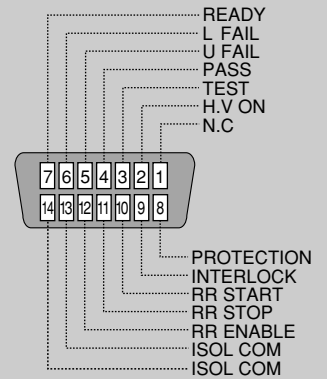
### TOS5051/5050



### TOS5030



### [Pin Configuration for the SIGNAL I/O Connector]



\*SIGNAL I/O connector is not available for Model TOS5030