

2. SPECIFICATIONS

Model			TOS8700	TOS8750
Test voltage	Applied voltage		AC/DC	
			0 - 3/0 - 10 kV	0 - 1.5/0 - 5 kV
	AC	Output (with 100 V AC line)	500 VA (Note 1)	
			10 kV, 50 mA	5 kV, 100 mA
		Waveform	AC line voltage waveform	
		Voltage regulation (with 100 V AC line)	20% or better	
			(For change from maximum rated load to no load)	
		Switching	Zero-turn-on switch (zero-start switch) is used.	
	DC	Output (with 100 V AC line)	100 W	125 W
			10 kV, 10 mA	5 kV, 25 mA
		Ripples	10 kV, no load: 120 Vp-p (typical) Maximum rated load: 1700 Vp-p (typical)	5 kV, no load: 40 Vp-p (typical) Maximum rated load: 800 Vp-p (typical)
		Voltage regulation (with 100 V AC line)	20% or better	25% or better
		(For change from maximum rated load to no load)		
Current limiting (Note 2)		○ A limiting resistor is inserted in the primary circuit of high voltage transformer. ○ When in Ac mode and cutoff current range is 0.5 - 10 mA, the current limiting function is selectalbe with an internal switch.		
Output voltmeter	Scales		Common for AC/DC	
			3/10 kV FS	1.5/5 kV FS
	Class		JIS Class 1.5	
	Accuracy		±3% FS	
AC indication graduation		Mean-value response/rms-value graduation		

Model		TOS8700	TOS8750
Judgement of test result (Cutoff of output by leak current detection)	Judgement system	- Window comparator system - NG judgement when current larger than the set value is detected - NG judgement when current is less than 1/10 of the set value is detected - When NG judgement is made, the output is cut off and an NG alarm is generated. - If no abnormal state is found during the set period, the GOOD signal is generated.	
	Reference value setting	0.5, 1, 2, 5, 10, 50 mA	0.5, 1, 2, 5, 10, 100 mA
		The highest ranges (50, 100 mA) are for AC only.	
	Multiplier	- Each of the above setting values can be multiplied up to 2.5 times continuously variably. - The scales are non-calibrated.	
		Except the 50 mA range of AC and 10 and 50 mA ranges of DC	Except the 100 mA ranges of both AC and DC
	Accuracy of judgement (Note 4)	- With reference to high limit (set value) : $\pm 5\%$ - With reference to low limit (1/10 of set Value) : $\pm (20\% + 20 \mu A)$	
	Detection system	Absolute value of leakage current is integrated and compared with the reference value.	
	Calibration	Calibrated for rms value of sine wave, using pure resistive load.	
Dimensions (Maximum dimensions)	No-load output voltage needed for detection (Note 5)	Approx. 1100 V when at 50 mA AC setting 300 V when at 10 mA DC setting	Approx. 700 V when at 100 mA AC setting 150 V when at 10 mA DC setting
		497 W $\times$ 330 H $\times$ 370 D mm (19.57 W $\times$ 12.99 H $\times$ 14.57 D in.) (500 W $\times$ 345 H $\times$ 460 D) mm (19.69 W $\times$ 13.58 H $\times$ 16.54 D in.)	350 W $\times$ 200 H $\times$ 300 D mm (13.78 W $\times$ 7.87 H $\times$ 11.81 D in.) (360 W $\times$ 220 H $\times$ 355 D) mm (14.17 W $\times$ 8.66 H $\times$ 13.98 D in)
Weight	(Note 6)	Approx. 40 kg (89 lb)	Approx. 22 kg (49 lb)

- Note 1: The period during which the Testers can be continuously operated with their maximum rated currents is up to 30 minutes.
- Note 2: When the cutoff current setting is at the 100 mA (50 mA) AC range or at the 10 mA range and the multiplier is used or when it is at any one of the DC ranges, the current limiting function is cleared unconditionally. (The value enclosed in the parentheses is for the TOS8700.)
- Note 3: Slight arc discharge may occur in the TOS8700 when its output voltage is set at 6 kV or over in ambient humidity 75% or over. This, however, is a normal indication and does not adversely affect the instrument operation.
- Note 4: ① When the output voltage is set at a low voltage in the DC mode, larger errors may be caused by ripples. The specification accuracy is met when the output voltage is 500 V or over for the TOS8700 or 200 V or over for the TOS8750.
- ② When in the AC mode, the current which flows through the stray capacitances of the output circuit and measuring leads also causes measuring errors. The overall judgement error is the sum of this current and the above-mentioned judgement accuracy. Approximate values of such currents are shown in the following table. Note that, at high-sensitivity high-voltage test, the current which flows through the stray capacitances becomes larger than the low-limit judgement value and low-limit judgement may not be successfully made.

Output voltage	2 kV	4 kV	6 kV	8 kV	10 kV
Main unit only (without measuring leadwires)	8 μ A	16 μ A	24 μ A	32 μ A	40 μ A
When 350-mm-long leadwires are used being suspended in air	12 μ A	24 μ A	36 μ A	48 μ A	60 μ A
When the accessory leadwires (HTL-1.5W) are used	40 μ A	80 μ A	120 μ A	160 μ A	200 μ A

Note 5: Due to the internal resistance of the output circuit, to make NG judgement with the output terminals shorted, a certain level of no-load output voltage is needed. The values of such voltages are shown in the preceding table.

Note 6: Approx. 4kg increase when in line voltage modified.

Common Items

Test voltage waveform:

When an AC voltage is applied to a capacitive load, the output voltage may become higher than that when in no load due to the capacitive components of the load. Especially when the load (specimen) is of a voltage-dependent capacitance type (such as ceramic capacitors), the voltage waveform may be distorted. When the test voltage is 1.5 kV, however, effects caused by a capacitance lower than 1000 pF is negligible.

Test time:

Timer setting time: 2 - 60 sec. (with timer OFF switch)

Remote control:

(1) The test/reset operation can be remote-controlled in the following cases:

- When the Remote Control Box (optional) is used.
- When the High Voltage Test Probe (optional) is used.
(CAUTION: THE TEST VOLTAGE MUST NOT BE HIGHER THAN 5 kV.)
- When the instrument is controlled with a make-contact of a relay or a switch.
- When low-active control is made with logic elements. The input conditions of the Testers in this case are as follows:
 - HIGH level input voltage: 11 - 15 V
 - LOW level input voltage: 0 - 4 V
 - LOW level sweepout current: 2 mA or less

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Note 7: The input terminals are pulled up to +15V supply voltage by a resistor. If the input terminals are made open, the state is identical with that a HIGH level input is applied.

- (2) The Tester can be set to the protected state (the state that TEST ON is disabled) by making open the protection input terminals which normally are shorted with a shorting bar.

Leak current monitor terminals:

When checking or calibrating the cutoff current, an AC or DC milliammeter to monitor the AC or DC current may be connected to these terminals.

Output signals:

The types of the output signals available and the conditions of their generation are as follows:

Name of signal	Conditions for signal generation	Type of signal
TEST signal	During the period the test is performed	Make-contact signal, lamp
GOOD signal	When GOOD judgement is made, 200 msec	Make-contact signal, lamp, buzzer
NG alarm	When NG judgement is made, continuous	Make-contact signal, lamp, buzzer

Note 8: (1) The rating of the contact signal are 100 V AC, 1 A, or 30 V DC, 1 A.

- (2) Loudness of the buzzer sound is adjustable with a single knob in common for both GOOD and NG signals.

Ambient conditions:

Temperature and humidity

to meet specified performance: 5 to 35°C (41 to 95°F), 20 to 80% RH

Operatable temperature and humidity: 0 to 40°C (32 to 104°F), 20 to 80% RH

Power Requirements:

Line voltage: 100 V $\pm$ 10%, 50/60 Hz AC
(Can be factory-modified to nominal 110V, 115V,
120V, 200V, 220V, 230V and 240V.)

Power consumption: 15 VA or less when no load (in the reset state)
(Note 9)
Approx. 600 VA when with rated load

Insulation resistance: 30 M Ω or over, with 500 V DC

Withstanding voltage: 1000 V AC, 1 minute

Note 9: Power consumption of the instrument modified to operate on an AC
line voltage other than 100 V is as follows.

110/115/120 V : 25 VA or less

200/220/230/240 V: 45 VA or less

Accessories:

- High Voltage Test Leadwires, HTL-1.5W 1 set
(5 kV or lower)
- High Voltage Test Leadwire, HTL-1.5WH 1 (for TOS8700 only)
(higher than 5 kV)
- Shorting Bar to Remote Protection Terminal 1 (Installed on main unit)
- Shorting Bar for Current Monitor Terminal 1 (Installed on main unit)
- "HIGH VOLTAGE DANGER" label 1
- Instruction Manual 1
- 5P DIN Plug (assembly type) 1

Note 10: The "High Voltage Test Leadwire, for 10 kV" which is supplied as
an accessory of the TOS8700 is a silicone-sheated cable with a
diameter of approximately 12 mm. Be sure to use this cable when
the test voltage is higher than 5 kV.