

Digital Hipot Tester

Model: KT-5000PD

Manual



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Bright company, Kind people

High Voltage Equipments, Testers & Products

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1. Specification of the product.

(1) Power Source

- a. Operating Voltage : 220 V ~ 230 V, 50 / 60 Hz,
- b. Power Consumption : approx. 120 W

(2) Test Voltage

- a. Output Test Voltage : AC 0 ~ 5 kV (2 range : 0 ~ 5 kV, 0 ~ 2.5 kV)
- b. Max Test Current : 20 mA
- c. Test Voltage Waveform : AC sin wave
- d. Voltage Drop : Below 100 V (from no load to max load.)
- e. ON / OFF Method : zero cross switch

(3) Current Limit Preset

- a. Current Range : 0 ~ 19.99 mA
- b. Accuracy : below $\pm 3 \%$

(4) Test Judgement

- a. When the current comes over the limit preset value, the tester judges the product to be Bad.
- b. When the product is judged to be Bad, test voltage is cut down, the red lamp and buzzer works.
- c. Test procedure continues until the timer preset.

(5) Test Time

: Manual or Auto (timer preset is available from 1 to 99 sec)

(6) Output Voltage Meter

: F.S 19.99 kV Digital Voltage Meter (below $\pm 3 \%$)

(7) Output Current Meter

: F.S 19.99 mA Digital Current Meter (below $\pm 3 \%$)

(8) Environment of Usage

: Temp (20 ± 5) °C, Humidity below 60 %

(9) Demensions

: 420 (W) x 240 (H) x 430 (D) mm

(10) Weight

: Approx. 20 kg

2. Explanation of front panel

- KT-5000PD measures the high voltage withstanding between two conductive materials, such as coil to core, and coil to coil, etc.

This tester checks the leakage current flowing into the product under test, and when this leakage current comes over the preset current, then Bad(N.G) result is displayed with Red lamp(⑧) with buzzer alarm.

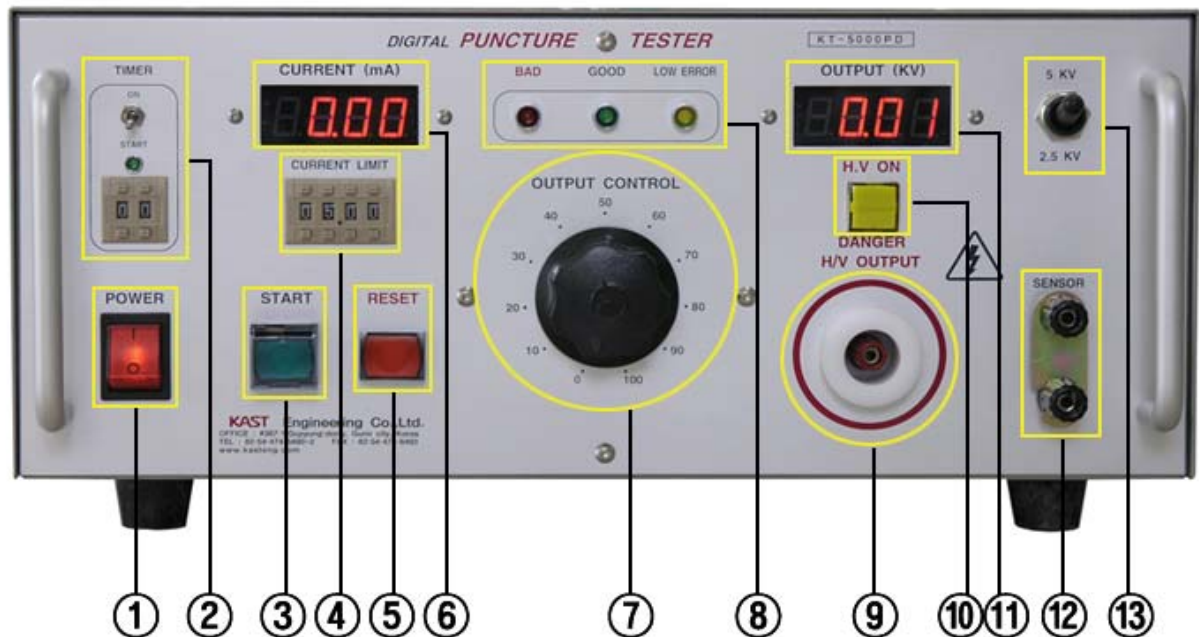


Fig 1) Front panel of KT-5000PD

① POWER SWITCH

POWER Switch with Indicating Lamp.

② TIMER SETTING SWITCH

Test time can be set from 1 ~99 sec.

- 1) In ON Timer (②), The test is proceeding until preset time of timer
- 2) In OFF Timer (②), The test is proceeding until pushing of RESET Button(⑤)

③ START SWITCH

This is START P/B Switch. When you push this button for at least 0.2 sec, then H.V lamp(⑩) turns ON and the preset output voltage is flowing.

④ CUTOFF CURRENT Limit P/B SWITCH

This thumb wheel switch is used to preset the Cutoff Current Limit value.

⑤ RESET SWITCH

When you want to stop the proceeding test, push this RESET(⑤) button.
When the test result is as Bad(N.G), BAD Lamp(red of ⑧) turns ON with buzzer alarm, which makes to stop flowing of output voltage.

⑥ **CURRENT (leakage current) DISPLAY METER**

During test, leakage current flowing into product under test is displayed, and maximum allowable leakage current into product under test is 20 mA

⑦ **OUTPUT VOLTAGE KNOB**

Output Voltage (AC Voltage) is controlled by OUTPUT VOLTAGE KNOB(⑦).
The following Fig 3 shows the adjustment of output voltage.

⑧ **BAD, GOOD display Lamp**

Test results(BAD, GOOD) are displayed as lamp color.

When the measurement is found as good, then green Lamp turns on.

When the measurement is found as failure, then red Lamp turns on with alarm.

When the ground of the tester is open , then yellow lamp turns on.



Fig 2) Green Lamp showing good test result

⑨ **H.V OUTPUT**

This is the high voltage test output terminal.

The output voltage value is as same as the preset voltage.

⑩ **H.V ON LAMP**

When Output voltage is flowing, H.V lamp turns on with Yellow-light.

⑪ **OUTPUT (kV) Voltage Meter**

Output Voltage (AC Voltage) can be set by adjusting the OUTPUT CONTROL KNOB(⑦)



Fig 3) Adjusting of test voltage

For example, the following procedure shows how to preset the output voltage.

A : Push START Button (③), then H.V ON Lamp (⑩) is turned on.

B : Adjust OUTPUT CONTROL Knob (⑦), then the output test voltage is displayed on output voltage meter (⑪), 1.00 means 1 kV output.

⑫ Sensor, Ground Terminal

These 2 terminals must be connected while testing.

⑬ VOLTAGE RANGE SELECTION TOGGLE Switch

This switch is up/down toggle switch, and is used to set the maximum of output voltage under good resolution.



Fig 4) Adjusting of OUTPUT VOLTAGE KNOB

A : In "UP" position of toggle bar.

Full scale of OUTPUT VOLTAGE comes to 5 kV

B : In "Down" position of toggle bar.

Full scale of OUTPUT VOLTAGE comes to 2.5 kV

3. Explanation of rear panel terminals

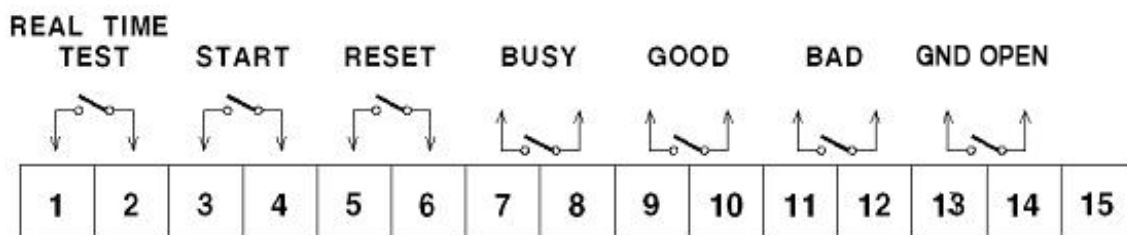


Fig 5) External Interface of I / O Terminals

(3), (4) START Terminal

: It works same as the START Button on the front panel.

(5), (6) RESET Terminal

: Short these terminals to cut the applied output voltage or re-start the test when after the test time is over by the timer.

(7), (8) BUSY Terminal

: Relay contact signal comes out while test, and the contact signal is make (A) only, the capacity of contact is 1 A with AC 250 V, 2 A with DC 30 V.

(9), (10) GOOD Terminal

: Contact signal comes out when after the product is judged to be good.

(11), (12) BAD Terminal

: Contact signal comes out when after the product is judged to be Bad.

(13), (14) GND OPEN Terminal

: Contact signal comes out when the 2 GND Terminals of the tester is not connected earth other.

4. Operating Sequence

(1) Check the AC power source line is 220 V, $\pm 10\%$, turn the OUTPUT CONTROL Knob (⑦) to the counter-clock wise (Min position) fully, then apply the AC power source line.

(2) Earth the GND Terminal on the rear panel to the earth.

(3) Select the test voltage

: Set the max output voltage to 2.5 kV or 5 kV with the VOLTAGE RANGE SELECTION TOGGLE Switch (⑬).

(4) Preset the limit current

: Preset the limit current on the suitable judgement point of the product-under-test.

(5) Preset the test time

: If the operator wants to test the product under preset time, put the Timer ON / OFF Switch ON position, otherwise put the timer OFF position.

(6) Preset the test voltage

: Turn the OUTPUT CONTROL Knob to the CCW (Min) direction fully, and push the START Button (③), then the H.V ON Lamp (⑩) comes ON, then turn the OUTPUT CONTROL Knob (⑦)

to the CW (Max) direction slowly while watching on the OUTPUT (kV) Voltage Meter (⑪) until it displays the correct test voltage you want, then push the RESET Button (⑤) to stop applying the H.V output. Now the tester is finally preset and ready to use.

(7) Connect the product-under-test to the tester.

: Verify if the voltage meter displays "0", and the H.V ON Lamp (⑩) is turned OFF to avoid the electric shock.

Contact the "Low voltage test" lead wire (Black) from the SENSOR, GND Terminal (⑫) to the case or lower voltage line (GND) of the product, and contact the H.V test lead wire (Red) to the product. Now all is prepared to test the product.

(8) Now if the operator pushes the START Button (③) once, the test procedure starts and keeps on going until the RESET Button (⑤) is pushed, or the product is judged to be Bad.

But when the timer is preset and the operator set the Timer ON / OFF Switch (②) "ON" position, the test time is depended on the test time which is limited by the Time Preset Thumb Wheel Switch.

While on testing procedure, if the RESET Button (⑤) is pushed, the test procedure stops.

Other wise in case of the product is judged to be Bad (If the current comes over the current limit value) in test procedure, the Bad Lamp (⑧) and buzzer works. And the test stops automatically.

However if the test procedure is stopped, the operator must push the RESET Button (⑤) to cut off the H.V and make sure the tester wouldn't work.

5. Example how to set the cutoff current and output voltage

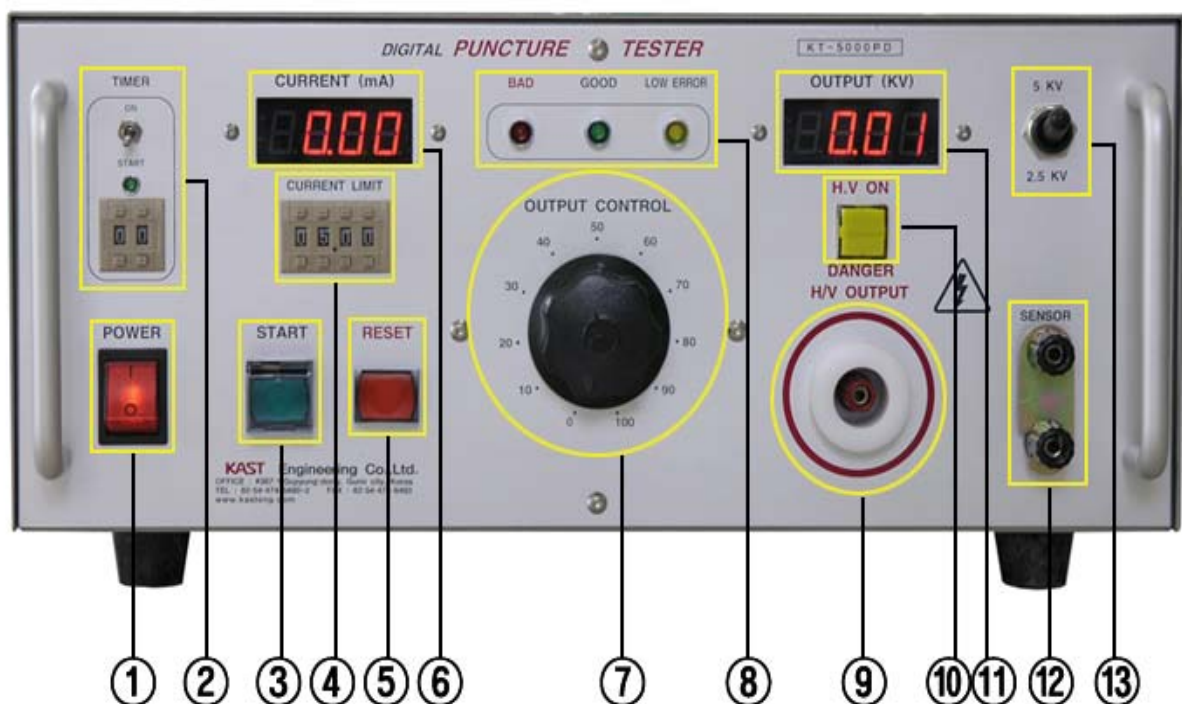


Fig 6) Front panel of Hipot tester (KT-5000PD)

Presetting condition of KT-5000PD depends on product under test.
The following shows an example for presetting conditions.

Power Switch (①)	-	AC 220 V, 50 / 60 Hz
START Button (③)	-	Test during the preset time
Time Preset Thumb Wheel Switch (②)	1 ~ 99 sec	test duration time
Leakage current preset (④)		0.01 ~ 19.99 mA presettable
VOLTAGE RANGE SELECTION TOGGLE Switch (⑬) - By up position of bar - By down position of bar	5 kV 2.5 kV	Selectable by this toggle switch. Full scale by OUTPUT CONTROL Knob Full scale by OUTPUT CONTROL Knob
Output Control Knob (⑦)		5 kV variable
Test Result BAD, GOOD, OPEN Lamp (⑧)	Good Bad	If power line is opened, OPEN lamp turns on. Green lamp Red lamp, Buzzer alarm

- End of manual -