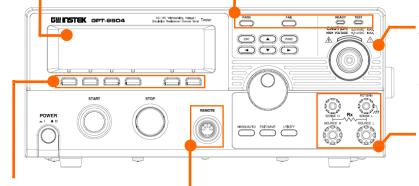


# Key Features

- 200VA AC Test Capacity
- 240x64 Ice Blue Dot matrix LCD
- Manual/Auto Mode
- Function Key for quick selecting
- High intensity flash for Caution & Status indication
- Safety INTERLOCK function
- Zero Crossing Turn-on Operation
- Controllable Ramp-up Time
- True RMS Current Measurement
- High resolution: 1uA for measuring current, 2V for setting voltage
- PWM switching amplifier to enhance the power efficiency and reliable testing
- Max. 100 memory block for test condition (step) setting. And each step can be named individually.
- Remote terminal on the front panel for "start", "stop" and "remote active check"
- Interface : RS-232C, USB device, Signal I/O and GPIB (optional)

240 x 64 Ice Blue Matrix LCD display, supporting a grater view of setting parameters and testing results.

High Intensity LED Indictors to show the status of safety tester.



High Voltage Output for AC 5kV, DC 6kV or 50V~1000V in 50V per step for Insulation Resistance testing.

High Current Output up to 30A ac for 4 wires Ground Bond testing.

Quickly selecting Function keys, corresponding to the functions or parameters display on the screen.

The Signal I/O port provides remotely

monitor the test status of the tester.

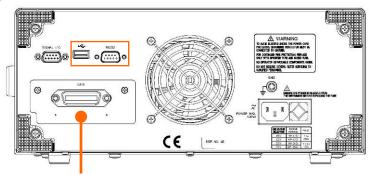
"start" and "stop" function and

 Remote Terminal provides "start" and "stop" control by an external controller.

> USB and RS-232 communication ports facilitate the easy & convenient communication.







GPIB communication is supported as optional.



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## Application and Target Markets

- Production and Compliance Testing of electrical products
  - Power Cord
  - House Appliances
  - Information Technology Equipment
  - Medical Equipment
  - 240 x 64 matrix LCD display and high intensity status indicators for clear and easy observation.
  - Variety safe considerations, fast cutoff / protective Interlock key/ discharge after testing, to ensure the safety of operator.
  - PWM amplifier design to ensure the precision tests of the DUT and the reliability and service lifetime of tester.
  - Various control methods, manual / remote terminal / signal I/O, to fit with the actual requirement of workplace environment.
  - Testing condition reserved up to 100 sets memory for multi-production.
  - Up to 16 reserved testing conditions can be combined as sequence testing.
  - Remote Communication ports, RS-232C/ USB device/ GPIB(optional), retrieving test data and results is convenient via a PC connection.

#### Quality Assurance Verification

- 240 x 64 matrix LCD display and high intensity status indicators for clear and easy observation.
- Various control methods, manual/remote terminal/signal I/O, to fit with the actual requirement of workplace environment.
- Testing condition reserved up to 100 sets memory for multi-production.
- Up to 16 reserved testing conditions can be combined as sequence testing.
- Remote Communication ports, RS-232C/ USB device/ GPIB(optional), retrieving test data and results is convenient via a PC connection for further analysis.

#### Development validation

- 240 x 64 matrix LCD display and high intensity status indicators for clear and easy observation.
- High testing performance, 2V/step for withstanding output voltage adjustment and 50V/step for insulation resistance voltage output setting, to verify the capability of electrical product or component.
- Remote Communication ports, RS-232C/ USB device/ GPIB(optional), retrieving test data and results is convenient via a PC connection for further analysis.

# **G<u><u><u></u></u><b>UNSTEK**</u>

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# **GPT-9800 series Specification**

## Environment

Note	• To operate the GPT-9800 series over the specific temperature range may cause damage to the circuit. And, do not use the GPT-9800 series in a place where strong magnetic or electric field exists.
Warranty Environment	15°C to 35°C, Humidity $\leq$ 70% (no condensation)
<b>Operation Environment</b>	0°C to 40°C, Humidity $\leq$ 70% (no condensation)
Storage Environment	-10°C to 70°C, Humidity $\leq$ 85% (no condensation)
Installation Location	Indoors at an amplitude of up to 2000m

#### General

Note	<ul> <li>The specifications apply when the GPT-9800 series are powered on for at least 30 minutes at 15°C~35°C.</li> </ul>	
Display	240 x 64 Ice Blue dot matrix LCD	
Memory	100 memory blocks each for AUTO and MANU mode	
Interface	RS232C, USB device, Signal I/O and GPIB (option)	
Power Source	AC 100 V / 120 V / 220 V / 230 V ±10%	
Power Line Frequency	y 50/60Hz	
Power Consumption	Max 500VA	
Dimensions	330(W) x 150(H) x 460(D) mm	
Weight	Approx. 15kg max. for GPT-9803/9802/9801 Approx. 19kg max. for GPT-9804	

#### AC Withstanding Voltage [1]

Output-Voltage Range [2]	0.100kV~ 5.000kV
Output-Voltage Resolution	2V/step
Output-Voltage Accuracy	$\pm$ (1% of setting + 5V) with no load
Maximum Rated Load [3]	200 VA (5kV/40mA)
Maximum Rated Current	40mA (0.5kV <v<i>≦5kV)</v<i>
	10mA (0.1kV <i>≦</i> V <i>≦</i> 0.5kV)
Output-Voltage Waveform	Sine wave
Output-Voltage Frequency	50 Hz / 60 Hz selectable
Voltage Regulation	$\pm$ (1% reading + 5V) [Maximum rated load ->no load]
Voltmeter Accuracy	$\pm$ (1% of reading + 5V)
Current Measurement Range	0.001mA~40.0mA
Current Best Resolution	0.001mA(0.001mA~0.999mA)
	0.01mA(01.00mA~09.99mA)
	0.1mA(010.0~040.0mA)
Current Measurement Accuracy	$\pm$ (1.5% of reading + 30uA)
Window Comparator Method	Yes
ARC Detect	Yes
RAMP (Ramp-Up Time)	0.1s~999.9s
TIMER (Test Time) [4]	OFF, 0.5s~999.9s
GND	RETURN/GUARD
[1] Applicable to all models.	

[2] The maximum adjustable voltage to AC 5.100kV.[3] Output Limitation in AC Withstanding Voltage Testing as below.

	Upper Current	Pause	Output Time
^	a0mA≦I≦40mA	At least as long as the output time	Approx. 240 seconds
А	$C \qquad 0.001 \text{mA} \le I < 30 \text{mA}$	Not necessary	Continuous output possible
г	4.1 The time on some sub-the turner of off	the second secon	-I- ( MANUL *** 000 )

[4] The timer can only be turned off when the tester is in special MANU mode (MANU=\*\*\*-000)

# G<u><u><u></u></u> INSTEK.</u>

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## DC Withstanding Voltage [1]

Output-Voltage Range [2]       0.100kV~ 6.000kV         Output-Voltage Resolution       2V/step         Output-Voltage Accuracy       ± (1% of setting + 5V) with no load         Maximum Rated Load [3]       50W (5kV/10mA)         Maximum Rated Current       10mA (0.5kV < V≦6kV)         2mA (0.1kV≤V≤0.5kV)       2mA (0.1kV≤V≤0.5kV)         Voltage Regulation       ± (1% of reading + 5V) [Maximum rated load ->no load]         Voltmeter Accuracy       ± (1% reading + 5V)         Current Measurement Range       0.001mA~ 10.0mA         Current Best Resolution       0.001mA(0.001mA~0.999mA)         0.1mA(010.0mA)       0.1mA(010.0mA)         Current Measurement Accuracy       ± (1.5% of reading + 30uA)         Window Comparator Method       Yes         ARC Detect       Yes         RAMP (Ramp-Up Time)       0.1s~999.9s         TIMER (Test Time) [4]       OFF, 0.5s~999.9s         GND       RETURN/GUARD         [1] Applicable to GPT-9804/9803/9802.       [2] The maximum adjustable voltage to DC 6.100kV.         [2] Output Limitation in DC Withstanding Voltage Testing as below.       [3] Output Limitation in DC Withstanding Voltage Testing as below.		
Output-Voltage Accuracy $\pm$ (1% of setting + 5V) with no loadMaximum Rated Load [3]50W (5kV/10mA)Maximum Rated Current10mA (0.5kV < V $\leq$ 6kV) $2mA$ (0.1kV $\leq$ V $\leq$ 0.5kV)Voltage Regulation $\pm$ (1% of reading + 5V) [Maximum rated load ->no load]Voltmeter Accuracy $\pm$ (1% reading + 5V)Current Measurement Range0.001mA~0.09mA)Current Best Resolution0.001mA(0.001mA~0.999mA)0.1mA(01.00mA~09.99mA)0.1mA(01.00mA)Current Measurement Accuracy $\pm$ (1.5% of reading + 30uA)Window Comparator MethodYesARC DetectYesRAMP (Ramp-Up Time)0.1s~999.9sTIMER (Test Time) [4]OFF, 0.5s~999.9sGNDRETURN/GUARD[1] Applicable to GPT-9804/9803/9802.[2] The maximum adjustable voltage to DC 6.100kV.	Output-Voltage Range [2]	0.100kV~ 6.000kV
Maximum Rated Load [3]50W (5kV/10mA)Maximum Rated Current10mA ( $0.5kV < V \leq 6kV$ ) $2mA (0.1kV \leq V \leq 0.5kV)Voltage Regulation\pm (1% of reading + 5V) [Maximum rated load ->no load]Voltmeter Accuracy\pm (1% reading + 5V)Current Measurement Range0.001mA \sim 10.0mACurrent Best Resolution0.001mA \sim 0.99mA)0.01mA(01.00mA \sim 0.99mA)0.1mA(010.0mA)Current Measurement Accuracy\pm (1.5\% of reading + 30uA$ )Window Comparator MethodYesARC DetectYesRAMP (Ramp-Up Time) $0.1s \sim 999.9s$ TIMER (Test Time) [4]OFF, $0.5s \sim 999.9s$ GNDRETURN/GUARD[1] Applicable to GPT-9804/9803/9802.[2] The maximum adjustable voltage to DC 6.100kV.	Output-Voltage Resolution	2V/step
Maximum Rated Current $10mA (0.5kV < V \leq 6kV)$ $2mA (0.1kV \leq V \leq 0.5kV)$ Voltage Regulation $\pm (1\%$ of reading + 5V) [Maximum rated load ->no load]Voltmeter Accuracy $\pm (1\%$ reading + 5V)Current Measurement Range $0.001mA \sim 10.0mA$ Current Best Resolution $0.001mA(0.001mA \sim 0.999mA)$ $0.01mA(01.00mA \sim 0.999mA)$ $0.1mA(010.0mA)$ Current Measurement Accuracy $\pm (1.5\%$ of reading + 30uA)Window Comparator MethodYesARC DetectYesRAMP (Ramp-Up Time) $0.1s \sim 999.9s$ TIMER (Test Time) [4]OFF, 0.5s $\sim 999.9s$ GNDRETURN/GUARD[1] Applicable to GPT-9804/9803/9802.[2] The maximum adjustable voltage to DC 6.100kV.	Output-Voltage Accuracy	$\pm$ (1% of setting + 5V) with no load
$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Maximum Rated Load [3]	50W (5kV/10mA)
Voltage Regulation       ± (1% of reading + 5V) [Maximum rated load ->no load]         Voltmeter Accuracy       ± (1% reading + 5V)         Current Measurement Range       0.001mA~ 10.0mA         Current Best Resolution       0.001mA(0.001mA~0.999mA)         0.1mA(01.00mA~09.99mA)       0.1mA(010.0mA)         Current Measurement Accuracy       ±(1.5% of reading + 30uA)         Window Comparator Method       Yes         ARC Detect       Yes         RAMP (Ramp-Up Time)       0.1s~999.9s         TIMER (Test Time) [4]       OFF, 0.5s~999.9s         GND       RETURN/GUARD         [1] Applicable to GPT-9804/9803/9802.       [2] The maximum adjustable voltage to DC 6.100kV.	Maximum Rated Current	10mA (0.5kV < V <i>≦</i> 6kV)
Voltmeter Accuracy       ± (1% reading + 5V)         Current Measurement Range       0.001mA~ 10.0mA         Current Best Resolution       0.001mA(0.001mA~0.999mA)         0.01mA(01.00mA~09.99mA)       0.1mA(010.0mA)         Current Measurement Accuracy       ±(1.5% of reading + 30uA)         Window Comparator Method       Yes         ARC Detect       Yes         RAMP (Ramp-Up Time)       0.1s~999.9s         TIMER (Test Time) [4]       OFF, 0.5s~999.9s         GND       RETURN/GUARD         [ 1 ] Applicable to GPT-9804/9803/9802.       [ 2 ] The maximum adjustable voltage to DC 6.100kV.		2mA (0.1kV <i>≦</i> V <i>≦</i> 0.5kV)
Current Measurement Range       0.001mA~ 10.0mA         Current Best Resolution       0.001mA(0.001mA~0.999mA)         0.01mA(01.00mA~09.99mA)       0.01mA(01.00mA~09.99mA)         0.01mA(01.00mA~09.99mA)       0.1mA(010.0mA)         Current Measurement Accuracy       ±(1.5% of reading + 30uA)         Window Comparator Method       Yes         ARC Detect       Yes         RAMP (Ramp-Up Time)       0.1s~999.9s         TIMER (Test Time) [4]       OFF, 0.5s~999.9s         GND       RETURN/GUARD         [1] Applicable to GPT-9804/9803/9802.       [2] The maximum adjustable voltage to DC 6.100kV.	Voltage Regulation	$\pm$ (1% of reading + 5V) [Maximum rated load ->no load]
Current Best Resolution       0.001mA(0.001mA~0.999mA)         0.01mA(01.00mA~09.99mA)         0.1mA(010.0mA)         Current Measurement Accuracy       ±(1.5% of reading + 30uA)         Window Comparator Method       Yes         ARC Detect       Yes         RAMP (Ramp-Up Time)       0.1s~999.9s         TIMER (Test Time) [4]       OFF, 0.5s~999.9s         GND       RETURN/GUARD         [ 1 ] Applicable to GPT-9804/9803/9802.       [ 2 ] The maximum adjustable voltage to DC 6.100kV.	Voltmeter Accuracy	$\pm$ (1% reading + 5V)
0.01mA(01.00mA~09.99mA)         0.1mA(010.0mA)         Current Measurement Accuracy         ±(1.5% of reading + 30uA)         Window Comparator Method         Yes         ARC Detect         RAMP (Ramp-Up Time)         0.1s~999.9s         TIMER (Test Time) [4]         OFF, 0.5s~999.9s         GND         RETURN/GUARD         [1] Applicable to GPT-9804/9803/9802.         [2] The maximum adjustable voltage to DC 6.100kV.	Current Measurement Range	0.001mA~ 10.0mA
0.1mA(010.0mA)Current Measurement Accuracy±(1.5% of reading + 30uA)Window Comparator MethodYesARC DetectYesRAMP (Ramp-Up Time)0.1s~999.9sTIMER (Test Time) [4]OFF, 0.5s~999.9sGNDRETURN/GUARD[1] Applicable to GPT-9804/9803/9802.[2] The maximum adjustable voltage to DC 6.100kV.	Current Best Resolution	0.001mA(0.001mA~0.999mA)
Current Measurement Accuracy±(1.5% of reading + 30uA)Window Comparator MethodYesARC DetectYesRAMP (Ramp-Up Time)0.1s~999.9sTIMER (Test Time) [4]OFF, 0.5s~999.9sGNDRETURN/GUARD[1] Applicable to GPT-9804/9803/9802.[2] The maximum adjustable voltage to DC 6.100kV.		0.01mA(01.00mA~09.99mA)
Window Comparator MethodYesARC DetectYesRAMP (Ramp-Up Time)0.1s~999.9sTIMER (Test Time) [4]OFF, 0.5s~999.9sGNDRETURN/GUARD[1] Applicable to GPT-9804/9803/9802.[2] The maximum adjustable voltage to DC 6.100kV.		0.1mA(010.0mA)
ARC DetectYesRAMP (Ramp-Up Time)0.1s~999.9sTIMER (Test Time) [4]OFF, 0.5s~999.9sGNDRETURN/GUARD[1] Applicable to GPT-9804/9803/9802.[2] The maximum adjustable voltage to DC 6.100kV.	Current Measurement Accuracy	$\pm$ (1.5% of reading + 30uA)
RAMP (Ramp-Up Time)0.1s~999.9sTIMER (Test Time) [4]OFF, 0.5s~999.9sGNDRETURN/GUARD[1] Applicable to GPT-9804/9803/9802.[2] The maximum adjustable voltage to DC 6.100kV.	Window Comparator Method	Yes
TIMER (Test Time) [4]OFF, 0.5s~999.9sGNDRETURN/GUARD[1] Applicable to GPT-9804/9803/9802.RETURN/GUARD[2] The maximum adjustable voltage to DC 6.100kV.	ARC Detect	Yes
GND RETURN/GUARD [1] Applicable to GPT-9804/9803/9802. [2] The maximum adjustable voltage to DC 6.100kV.	RAMP (Ramp-Up Time)	0.1s~999.9s
[ 1 ] Applicable to GPT-9804/9803/9802. [ 2 ] The maximum adjustable voltage to DC 6.100kV.	TIMER (Test Time) [4]	OFF, 0.5s~999.9s
[2] The maximum adjustable voltage to DC 6.100kV.	GND	RETURN/GUARD
[3] Output Limitation in DC Withstanding Voltage Testing as below		
Upper Current Pause Output Time		
DC $0.001\text{ mA} \le I \le 10\text{ mA}$ Not necessary Continuous output possible		

[4] The timer can only be turned off when the tester is in special MANU mode (MANU=\*\*\*-000)

## Insulation Resistance [1]

Output Voltage	5(	0V~1000V
1 0		
Output-Voltage Resolution		50V/step
Output-Voltage Accuracy	± (1%	of setting +5V)
Resistance Measurement Range	1M	IΩ~ 9500MΩ
Test Voltage	Measure Range	Accuracy
50V≦V <500V	1~50MΩ 51~2000MΩ	$\pm$ (5% of reading + 1 MΩ) $\pm$ (10% of reading + 1 MΩ)
500V≦ V <b>⊴</b> 000V	1~500MΩ 501~9500 MΩ	$\pm$ (5% of reading + 1 M $\Omega$ ) $\pm$ (10% of reading + 1 M $\Omega$ )
Voltage Regulation	± (1% reading + 5V) [	Maximum rated load ->no load]
Window Comparator Method	· · · · ·	Yes
RAMP (Ramp-Up Time)	0	.1s~999.9s
TIMER (Test Time)		1s~999.9s
[ 1 ] Applicable to GPT-9804/9803		

#### Ground Bond [1]

Output-Current	03.00A~30.00A
Output-Current Resolution	0.01A
Output-Current Accuracy	$3A \leq I \leq 8A : \pm (1\% \text{ of reading} + 0.2A)$
	$8A < I \leq 30A : \pm(1\% \text{ of reading} + 0.05A)$
Test-Voltage	6Vac max.
Test-Voltage Frequency	50Hz/60Hz selectable
Resistance Measurement Range	0.1mΩ~ 650.0mΩ
Resistance Measurement Resolution	0.1mΩ
Resistance Measurement Accuracy	$\pm$ (1% of reading + 2 m $\Omega$ )
Window Comparator Method	Yes
TIMER (Test Time)	0.5s~999.9s
Test Method	Four terminal test mode
[1] Applicable to GPT-9804 only	



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# Product Outlook

# GPT-9804



#### GPT-9803/9802/9801





#### **Real Panel**

(For all models with optional GPIB)

## Ordering information

- GPT-9803 AC 200VA AC/DC Withstanding Voltage/ Insulation Resistance Tester
- GPT-9802 AC 200VA AC/DC Withstanding Voltage Tester
- GPT-9801 AC 200VA AC Withstanding Voltage Tester

## Included Accessories

Quick Start Guide x 1, CD x1(completed user manual) Power cord x 1, Interlock key x 1, Remote terminal male plug x 1, Test lead GHT-114 x 1 for GPT-9803/9802/9801 Test lead GHT-114 x 1, GTL-115 x 1 for GPT-9804

# Option

Opt.1 GPIB card

## **Optional Accessories**

GHT-113	High Voltage Test Pistol
GHT-205	High Voltage Test Probe
GTL-232	RS232C Cable, 9-pin Female to 9-pin, null Modem for Computer
GTL-247	USB Cable, A-A type, approx. 1.8m
GTL-248	GPIB Cable, approx. 2m
GRA-402	RACK Adapter Panel (19", 4U)



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#### **Replacement Information**

New Model	Replacement
GPT-9804 : AC+DC+IR+GB	GPI-745A
GPT-9803 : AC+DC+IR	GPI-735A and GPI-725A
GPT-9802 : AC+DC	GPT-715A
GPT-9801 : AC	GPT-705A

After GPT-9800 series launched, the GPT/GPI-700A series is going to be phase-out. The above table shows the replacement between models. For difference between this two series, please refer to the comparison below.

Red indication for the better features



전국대표전화: 1661-3799 | 팩스: 053-604-3701 http://www.topsi.co.kr E-mail: topsi@topi.co.kr