

## **GPT-9600 Series Safety Tester**

### **New Product Announcement**

GW Instek launches new economical safety testers, the GPT-9600 Series, which offers an affordable solution for supporting routine tests of major items of the safety standards such as IEC, EN, UL, CSA, GB, JIS and other safety regulations.

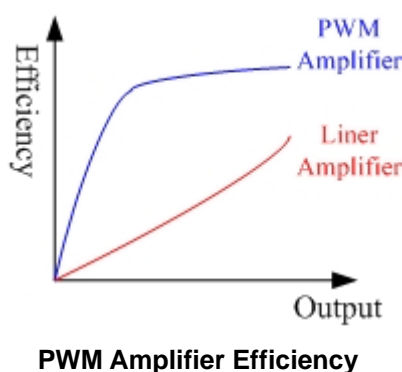


The GPT-9600 Series is built upon a platform of 100VA AC maximum power output. The GPT-9603 is a 3-in-1 model capable of performing AC withstanding, DC withstanding and insulation resistance tests. The GPT-9612 is capable of performing AC withstanding and insulation resistance tests. The GPT-9602 is capable of performing AC and DC withstanding tests, and GPT-9601 is able to perform AC withstanding test. The GPT-9600 Series is equipped with the high-efficiency PWM amplifier, which is the core of the platform design to impede the influence from the input AC voltage fluctuation and ensure a stable voltage output.

Following a tidy and easy-to-use design concept, the GPT-9600 Series renders users an intuitive operation environment by a simple and clear panel layout, a large LCD display and color LED indicators. The switching power supply, used as a universal input source, accommodates the power systems in most countries in the world. Unlike other members of GW Instek Safety Testers, the GPT-9600 Series uses a preset output voltage bar to indicate the expected output voltage for withstanding voltage tests instead of the traditional AC slide operation and indication. Furthermore, an AUTO mode, including test sequence selections of withstanding-then-insulation or insulation-then-withstanding, is designed for models carrying insulation Resistance test function to reduce the testing time of dual test items.

Other functions and features of GPT-9600 include: the zero crossing turn-on operation protects DUT from the impact of surge voltage output, the interlock function safeguards users from the hazardous shock of unintentional touch of the voltage output, a remote output on-off terminal in the front panel and a signal I/O port in the rear panel are provided as the means for remote start/stop control of the safety tester.

### **High Efficiency and High Stability Output**



The GPT-9600 Series, carrying a high-efficiency PWM amplifier design, generates output source up to 98% efficiency. This greatly reduces the energy loss from heat dissipation and therefore lowers the temperature within the cabinet. The suppression of temperature rise during heavy-duty operation of the tester significantly increases tester's reliability and service lifetime.

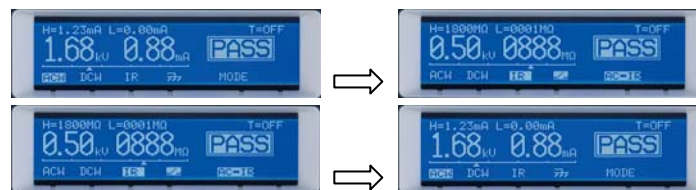
## Friendly User Interface



### Large LCD, High Intensity Indicators and Function Keys

The 240 x 48 display clearly shows the applied voltage, test parameters, test conditions, measurement value and result on the screen at the same time. The real-time status update on the LCD display accompanied by the multi-colored LED status indicators on the front panel allow operators to have a full control of the test process to perform precession test and avoid unnecessary operation risks at the same time. The status indicator above the high voltage output terminal will automatically flash when an output is in place. In addition, the function keys arranged below the LCD display provide convenient operation that test functions can be easily changed by a single pressing.

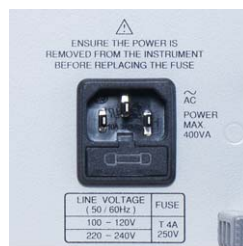
## Simply AUTO Mode



### Simply AUTO Mode

For models that include the Insulation Resistance test function; there is a simple AUTO mode (W-I or I-W) which allows the operator to run two test functions in sequence. The first test function can either be a withstanding voltage test followed by an insulation resistance test or vice versa, – thus eliminating the need to push the START button twice to run two separate tests.

## Support the Universal input voltage



### Universal Input Voltage Range

Additionally, the GPT-9600 series provides the universal input voltage range for operating equipment in

countries with different electrical power standards. With the GPT-9600 series, the hustle of switching or selecting input voltage range can be left behind. Furthermore, 50Hz or 60Hz can be selected to provide a stable and appropriate test voltage without relying on the electrical environment conditions of input power so as to meet the test requirements.

## Key Features of the GPT-9600 Series

- 100VA AC Test Capacity
- 240x48 Ice Blue Dot Matrix LCD
- Auto W-I and I-W Mode
- True RMS Current Measurement
- Zero Crossing Turn-on Operation
- Safety INTERLOCK Function
- PWM Switching Amplifier to Enhance the Power Efficiency and Reliable Testing
- Automatically Switching Input Source for Universal Input Voltage
- Interface : Remote Terminal, Signal I/O



*240 x 48 Matrix LCD display, supports a grater view of setting parameters and testing voltage/or results.*

*High Intensity LED Indicators to show the status of safety tester.*

*High Voltage Output for AC 5kV or DC 6kV*

*High Voltage Output Return terminal*

*Function keys, corresponding to the functions display on the screen.*

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

*Reserve port for calibration use only*

*The Signal I/O port provides remotely "start" and "stop" function and monitor the test status of the tester.*

*Automatically switching input source for world-wide input voltage*

## Specifications Comparison with Competitor

"X" represents "no such function" or "function not available"

	Brand Name/ Model	GPT-9603	Extech 7142
	Main Function	AC/DC/IR	AC/DC/IR
	Output Capacity	100VA	100VA
AC	Voltage Range	0.10 - 5.00kV	0 - 5.00kV
	Voltage Frequency	50/60Hz Selectable	50/60Hz Selectable
	Voltage Resolution	10V	10V
	Output Voltage Accuracy	x	±(2% of setting + 5V)
	Output Regulation	±1.5% of output + 2counts (from no load to full load)	1% of output + 5V (from no load to full load)
	Voltmeter Accuracy	±(1.5% of rdg + 2counts)	± (1.5% of rdg + 1 count)
	Current Limit	0.00 - 20.0mA	0 - 20.00mA
	Current Best Resolution	10uA	1uA
	Current Setting Accuracy	±(3% of setting + 3 counts)	±(2% of setting + 2 counts)
	Current measurement Accuracy	± (2% of rdg + 3 counts)	± (2% of rdg + 2 counts)
	Ramp up time	100ms fix	0.1-999.9s
	Ramp down time	x	0-999.9s
	ARC Detection	v	v
DC	Voltage Range	0.10 - 6.00kV	0 - 6.00kV
	Voltage Resolution	10V	10V
	Output Voltage Accuracy	x	±(2% of setting + 5V)
	Output Ripple		< 5% (6kV / 7500μA at Resistive Load)
	Voltmeter Accuracy	±(1.5% of rdg + 2counts)	± (1.5% of rdg + 1 count)
	Current Limit	0.00 - 6.00mA	0 - 7500uA
	Current Best Resolution	10uA	0.1uA
	Current Accuracy	±(3% of setting + 3 counts)	±(2% of setting + 2 counts)
	Current measurement Accuracy	± (2% of rdg + 3 counts)	± (2% of rdg + 2 counts)
	Ramp up time	100ms fix	0.1-999.9s
	Ramp down time	x	0, 1.0-999.9s
	ARC Detection	v	v
IR	DC Output	50V,100V,250V,500V,1000V	30V - 1000V
	Voltage Resolution	x	10V
	Voltage Accuracy	±(3% of setting + 1 count)	±(2% of setting + 5V)
	Voltmeter Accuracy	± (3% of rdg + 1 count)	± (1.5% of rdg + 5V)
	Measurement Range	1-2000MΩ	30-499V : 1-999MΩ 500-1000V : 1-9999MΩ
	Resistance Resolution	1MΩ	1MΩ
	Measurement Accuracy	50V/100V/250V: 1~50MΩ ±(5% of rdg + 2counts) 51~2000MΩ ±(10% of rdg + 2counts) 500V/1000V: 1~500MΩ ±(5% of rdg + 2counts) 501~2000MΩ ±(10% of rdg + 2counts)	100-500V: 8% of rdg+2counts  500-1000V: 1-1000MΩ(2% of rdg+2counts) 1000-9999MΩ(5% of rdg+2counts)
	Ramp up time	100ms fix	0.1-999.9s
	Ramp down time	x	0, 1.0-999.9s
Interface	RS232	x	RS485 (optional)
	Remote I/O	v	x
	Signal I/O	v	v
Other	Display	240 x 48 dot matrix LCD	128×64 Graphic LCD
	Memory	4 Test Mode	10 memory, 3 steps/memory
	Smart GFI	x	Available
	Interlock	Available	Available
	Rear Output	x	Available
	KeyLock	Available	Available

## Applications and Target Markets

### ■ Production and Routine Testing of Electrical Products

- Information Tech. Equipment
- Consumer Products
- R.L.C component
- Other tests with AC/DC withstanding testing lower than 20mAac or 5mAdc cut-off current
- 240 x 48 matrix LCD display and high intensity status indicators for clear and easy observation.
- Various safe considerations, zero crossing turn-on operation / 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.
- AUTO mode test procedure for W-I or I-W.
- Various control methods, manual / remote terminal / signal I/O, to fit with the actual requirement of workplace environment.
- Automatically switching input source for universal input voltage to prevent incorrect input source from damaging the instrument.

## Product Outlook of the GPT-9600 Series

Front



Rear



## Key Dates for Product Announcement

### GPT-9600

- |   |                                 |
|---|---------------------------------|
| 1. Distributor Announcement & Demo Unit order and Shipping      | 16 <sup>th</sup> of July. 2014  |
| 2. Global Market Announcement & Mass Quantity Order Fulfillment | 1 <sup>st</sup> of August. 2014 |

## Ordering information:

**GPT-9603 AC 100VA AC/DC Withstanding Voltage/Insulation Resistance Tester**

**GPT-9612 AC 100VA AC Withstanding Voltage/Insulation Resistance Tester**

**GPT-9602 AC 100VA AC/DC Withstanding Voltage Tester**

**GPT-9601 AC 100VA 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

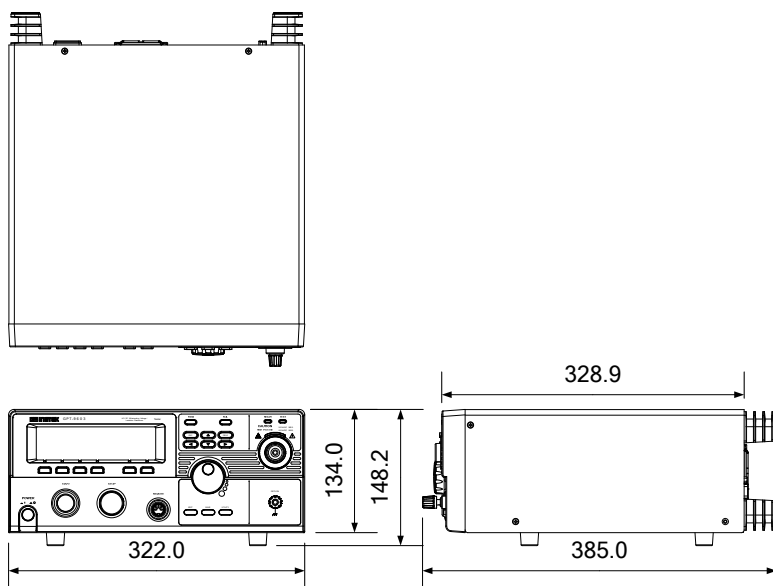


GHT-114

### Optional Accessories

GHT-113 High Voltage Test Pistol  
GHT-205 High Voltage Test Probe  
GRA-417 RACK Adapter Panel (19", 4U)

## Dimensions of the GPT-9600 Series



## Selection Guide of the GPT-9600 Series

	NEW	NEW	NEW	NEW
Output Capacity	100VA			
Model	GPT-9601	GPT-9602	GPT-9612	GPT-9603
AC Withstanding (ACW)	5kVac 20mA	5kVac 20mA	5kVac 20mA	5kVac 20mA
DC Withstanding (DCW)	-----	6kVdc 6mA	-----	6kVdc 6mA
Insulation Resistance (IR)	-----	-----	50/100/250/ 500/1000Vdc 2000MΩ	50/100/250/ 500/1000Vdc 2000MΩ
Ground Bond (GB)	-----	-----	-----	-----
ARC Detection	YES	YES	YES	YES
Ramp-Up Function	0.1s Fixed	0.1s Fixed	0.1s Fixed	0.1s Fixed
Memory Storage for Setting	1	2	2	3
AUTO Mode	-----	-----	AC-IR or IR-AC	AC-IR or IR-AC DC-IR or IR-DC
Safety Interlock	YES	YES	YES	YES
Remote Terminal	YES	YES	YES	YES
Signal I/O	YES	YES	YES	YES
USB/RS232C Interface	-----	-----	-----	-----
GPIO Interface	-----	-----	-----	-----
Display, LCD	240 x 48	240 x 48	240 x 48	240 x 48
CE Compliance	YES	YES	YES	YES

## Service Policy

### 1) 2-Year warranty

### 2) Service Support

The service instructions in the Service Manual will help distributors repair defective units promptly. Should a board replacement be necessary to fix a defective unit, a board swapping service is provided by Good Will Instrument to facilitate the repairs done at a distribution site.

### 3) GW Instek continues to provide the after sales support through its website. The most updated version of the service manual and Marcom material for the GPT-9600 series will be posted on the distributor zone of GW Instek Website at <http://www.gwinstek.com>.

## The GPT-9600 Series Specifications

### AC Withstanding Voltage [for all models]

Output-Voltage Range	0.10kV~ 5.00kV
Output-Voltage Resolution	10V
Maximum Rated Load	100 VA (5kV/20mA)
Maximum Rated Current	20mA (0.5kV < V ≤ 5kV), 5mA (0.1kV ≤ V ≤ 0.5kV)
Output-Voltage Waveform	Sine wave
Output-Voltage Frequency	50 Hz / 60 Hz selectable
Voltage Regulation	± (1.5% + 2 counts) [full load ->no load]
Voltmeter Accuracy	± (1.5% of reading + 2 counts)
Current Measurement Range [1]	0.01mA~20.0mA
Current Best Resolution	0.01mA(0.01mA~9.99mA) 0.1mA(10.0mA~20.0mA)
Current Measurement Accuracy	± (2.0% of rdg + 5 counts) when HI SET<1.00mA ± (2.0% of rdg + 3 counts) when HI SET≥1.00mA
Window Comparator Method	Yes
ARC Detect	Yes
RAMP (Ramp-Up Time)	0.1s Fixed
TIMER (Test Time)	OFF, 1s~180s
GND	ON

[ 1 ] Output Limitation in AC Withstanding Voltage Testing as below.

	Upper Current	Pause	Output Time
AC	15mA ≤ I ≤ 20mA	At least as long as the output time	Approx. 180 seconds
	0.01mA ≤ I < 15mA	Not necessary	Continuous output possible

### DC Withstanding Voltage [for GPT-9602/9603]

Output-Voltage Range	0.10kV~ 6.00kV
Output-Voltage Resolution	10V
Maximum Rated Load	25W (5kV/5mA)
Maximum Rated Current	6mA (0.5kV < V ≤ 6kV), 2mA (0.1kV ≤ V ≤ 0.5kV)
Voltage Regulation	± (1.5% + 2 counts) [full load ->no load]
Voltmeter Accuracy	± (1.5% of reading + 2 counts)
Current Measurement Range [1]	0.01mA~6.00mA
Current Best Resolution	0.01mA(0.01mA~6.00mA)
Current Measurement Accuracy	± (2.0% of rdg + 5 counts) when HI SET<1.00mA ± (2.0% of rdg + 3 counts) when HI SET≥1.00mA
Window Comparator Method	Yes
ARC Detect	Yes
RAMP (Ramp-Up Time)	0.1s Fixed
TIMER (Test Time)	OFF, 1s~180s
GND	ON


[ 1 ] Output Limitation in DC Withstanding Voltage Testing as below.

	Upper Current	Pause	Output Time
DC	0.01mA ≤ I ≤ 6.00mA	Not necessary	Continuous output possible

#### Insulation Resistance [for GPT-9612/9603]


Output Voltage	50V/100V/250V/500V/1000V	
Output-Voltage Accuracy	± (3.0% of setting + 1 count) with no load	
Voltage Regulation	± (1.5% + 2 counts) [full load ->no load]	
Voltmeter Accuracy	± (1.5% of reading + 2 counts)	
Resistance Measurement Range	1MΩ~ 2000MΩ	
Test Voltage	Measure Range	Accuracy
50V / 100V / 250V	1~50MΩ	± (5% of reading + 2MΩ)
	51~2000MΩ	± (10% of reading + 2MΩ)
500V / 1000V	1~500MΩ	± (5% of reading + 2MΩ)
	501~2000MΩ	± (10% of reading + 2MΩ)
Output Impedance	600kΩ	
Window Comparator Method	Yes	
RAMP (Ramp-Up Time)	0.1s Fixed	
TIMER (Test Time)	1s~180s	
GND	OFF	

#### General

 Note	The specifications apply when the GPT-9600 series are powered on for at least 30 minutes at 15°C~35°C.
Display	240 x 48 Ice Blue dot matrix LCD
AUTO Mode*	AC-IR / IR-AC / DC-IR / IR-DC
Interface	Remote, Signal I/O
Power Source	AC 100-120 V / 220-240 V ±10%
Power Line Frequency	50/60Hz
Power Consumption	Max 400VA
Dimensions	322(W) x 148(H) x 385(D) mm
Weight	Approx. 9kg max.

\* The available Auto mode depends on the selected model

#### Environment

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

Should you have any questions about the GPT-9600 series announcement, please don't hesitate to contact us.

Sincerely yours,

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