GW Instek GPT-12000

Electrical Safety Analyzer

New Product Announcement

This document allows GW Instek's partners to quickly grasp product's main features, FAB and ordering information.

GPT-12000 Series Electrical Safety Analyzer
New Product Announcement

GW Instek introduces the flagship model (200VA output capacity) safety analyzer-the GPT-12000 series, which is the first safety analyzer in the world to comply with IEC 61010-2-034 (Safety requirement for electrical requirement for measurement, control and laboratory use – particular requirements for measurement equipment for insulation resistance and test equipment for electric strength), which stipulates that the requirements of the software and hardware interfaces must be followed while designing high voltage and insulation resistance test and measurement instruments so as to ensure that users are provided with necessary protection and warning while using the instruments.

The GPT-12000 series safety analyzer has four models: GPT-12004 features AC/DC withstanding voltage test, insulation resistance test, AC ground bond test and continuity test; GPT-12003 conducts AC/DC withstanding voltage test, insulation resistance test, and continuity test; GPT-12002 carries out AC/DC withstanding voltage test and continuity test; GPT-12001 executes AC withstanding voltage test and continuity test. The entire series provides an output capacity of 200VA and utilizes a high-efficient PWM amplifier to effectively exclude the influence from the fluctuating input voltage or distorted waveforms so as to guarantee a stable high-voltage output while conducting AC withstanding voltage test on the DUT to meet the safety regulations such as IEC、EN、UL、CSA、GB、JIS that demand the test requirements for various electronic/electrical products or parts.

To comply with IEC 61010-2-034 requirements, the series takes into account of safety by adopting the double insulation design for input power supply and output voltage to enhance user safety. Additionally, the retracted on-off switch design (START key) and various (optional) mechanisms for test activation (for instance, press and hold for 1 second to activate, activation by pressing double keys, etc.) are incorporated into the series to avoid accidentally touching that results in high voltage/large current output causing damage and danger to products or users. High illumination LED lights (flashing or permanently lit) and a high volume audial indicator are included in designing the series to provide warnings of the status of the on-going tests or judgement results from the safety analyzer. On top of that, the DUT will be automatically discharged to the safe voltage (approximately 30V) after each test to prevent large residual test voltage from causing harm to users.

The series utilizes 7-inch color TFT LCD and inherits the consistent simplicity key design style of the product family to allow users to experience easy operations and a clear observation of the test results. The major test functions include AC withstanding voltage test (AC 5kV/40mA), DC withstanding voltage test (DC 6kV/10mA), insulation resistance test (DC 50V~1200V/50GΩ max.), ground bond test (AC 32A /650mΩ max.), and grounding continuity test (DC 100mA fixed/70Ω max.). The series also collocates with superb output adjustment resolution, measurement resolution (AC withstanding voltage: 1μA; DC withstanding voltage:

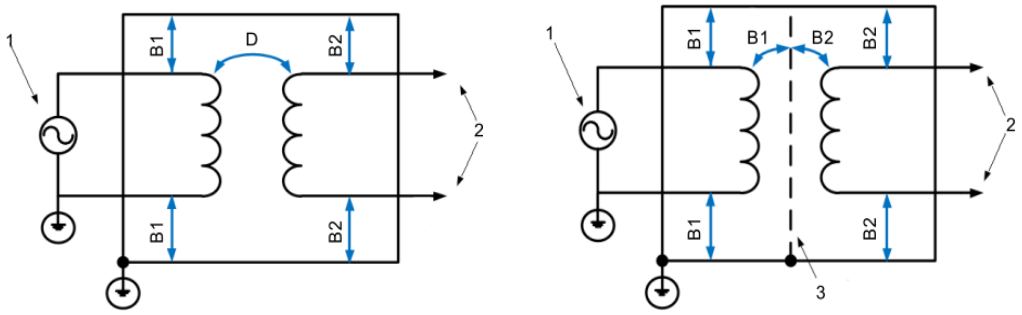
0.1μA; insulation resistance: 0.1MΩ; ground bond: 0.1MΩ; continuity test: 0.01Ω), controllable voltage ramp up and ramp down time settings, and upper/lower limit judgement settings, and large capacitance test capability (up to 47uF) for DUT with large capacitance such as surge absorber and large capacitance on the input terminal of EMC/EMI prevention. For Insulation resistance, provides 10mA pre-charged current (fixed) to first rapidly fully charge the DUT's capacitive load and then to conduct test and measurement so as to avoid misjudgment from fluctuating inrush current. All the above features of the series facilitate a more flexible execution of the required tests so that users can obtain accurate test and measurement results.

The statistic function is the highlight of the series. Test items, number of tests, judgement results are recoded after testing and the test results can be shown by bar graph on the display. Users can immediately learn the status of product tests and judgement distribution during the manufacturing process without using a PC. The other strong feature is the sweep function, which can be used for the analysis on product's crash point. Users can use the sweep mode to see the curve diagram of the test results after finishing the functional tests. Users can also select any time point during the process to analyze the relation between voltage and current (when ACW or DCW is selected). The test result of the certain period of time can be swept by setting start and stop time points to analyze the relation between voltage and current under that time frame. Furthermore, the tabular continuity test function can combine 10 manual memory sets to carry out automatic tests or 9 manual memory sets with one connection device to connect next automatic test so as to increase the test items of the continuity test. Users can obtain various test values and judgement results without switching to a different display screen.

Other functions and features of the GPT-12000 series include 100 sets of manual test memory for the storage of different test conditions; rear output terminal for system integration; front panel remote control terminal mount/rear panel Signal I/O for users to conveniently control the analyzer's output/stop based upon the requirements. The USB storage function allows test results to be stored in the USB flash drive to save the trouble of using a PC, and the function is conducive to the follow-up data analysis. For users with the requirements of PC control and test results recording, the series also provides RS-232C, USB and GPIB (optional)

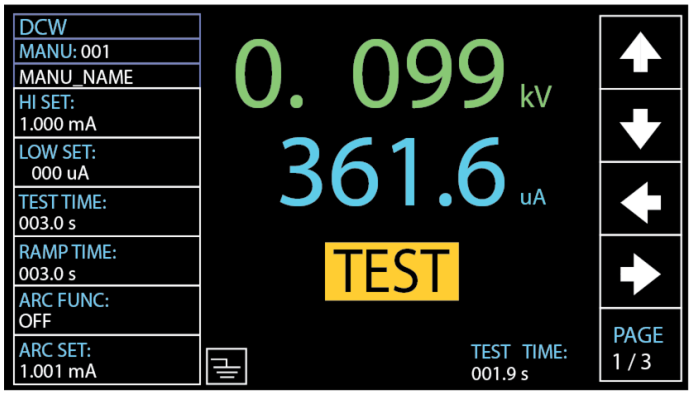
Analyze Your Safety Tests

Meets IEC 61010-2-034 design requirements



Providing the markets with safe electronic products is the responsibility of every manufacturer! Similarly, safety analyzer that tests whether electronic products meet safety regulations must attach the importance to the safety it provides! GPT-12000 is the world's first safety analyzer to comply with IEC 61010-2-034 (Safety requirement for electrical requirement for measurement, control and laboratory use – particular requirements for measurement equipment for insulation resistance and test equipment for electric strength). Apart from this, the safety considerations also include double insulation for input and output voltages, safe output/warning mechanism, post-test discharge mechanism, etc. to ensure user safety during the operation.

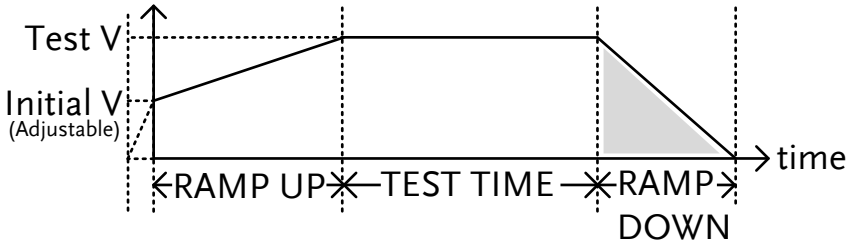
High Accuracy and High Resolution Testing Performance



High Adjustment & Measurement Resolution

For production tests and characteristic verification, the GPT-12000 series provides a withstand voltage test voltage (AC 5kV / DC 6kV) that can be adjusted in 1V steps with current measurement resolutions up to 1μA (ACW) or 0.1μA (DCW) to realize the small leakage current measurement for products or components. In addition, the insulation resistance test voltage can be adjusted in 50V steps from a DC output range of 50V to 1200V, and the resistance measurement resolution can reach 0.1MΩ. Since most safety regulations require AC power supply for ground bond test, the GPT-12000 series provides 8Vac (open) and 3A to 32Aac current for ground bond test with a resistance measurement resolution of 0.1mΩ. The entire series provides the continuity grounding test function with a 100mAdc (fixed) test source and a measurement resolution of 0.01Ω to detect if the tested equipment is correctly grounded. With these functions, users can perform various safety tests and verifications with high accuracy and reliability.

Flexible supplementary testing mechanism

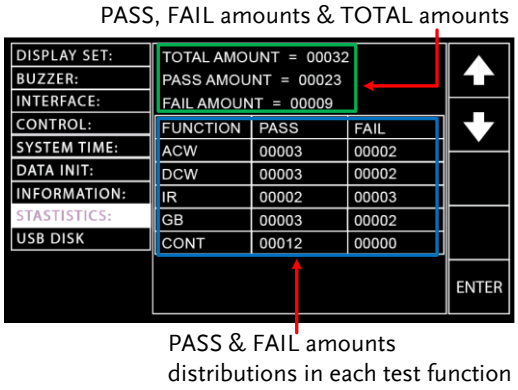


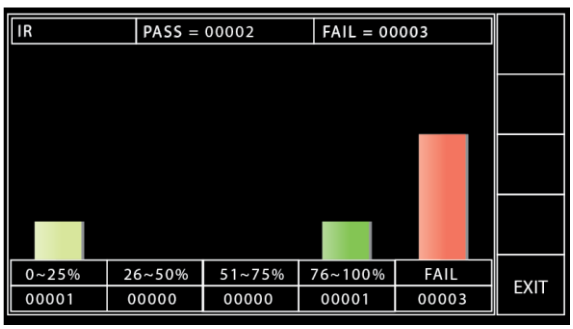
Testing Period Timing

To make tests compliant with the test requirements of relevant safety regulations, the GPT-12000 series provides a more flexible output sequence setting starting from the start point of the test. Taking the AC/DC withstand voltage test as an example, the initial voltage can be set. Users determine the initial voltage ratio (i.e., the ratio of the rated test voltage), and then the voltage ramp up can also be set to reduce the risk of insulation breakdown or damage to the DUT caused by transient high voltages. After the rated test voltage is reached, the upper/lower limit judgement window, delay judgment and test timer mechanism can be set to assist users to conduct tests smoothly and correctly. The new voltage ramp down time setting allows users to test with a ramp down voltage to avoid the impact of excessively high rated test voltage to instantaneous discharge on the DUT.

With respect to the insulation resistance test, other than the newly added grounding mode to perform test in accordance with the actual grounding state of the DUT, the setting mechanism of the supplementary upper/lower limit judgement is also added to shorten the test time. The user-definable mode mechanisms include: STOP ON FAIL: The test is terminated as soon as the FAIL setting is met; STOP ON PASS: The test is terminated as long as the PASS setting is met, or TIMER: judgement is conducted when the timer time is reached.

Statistic and analysis

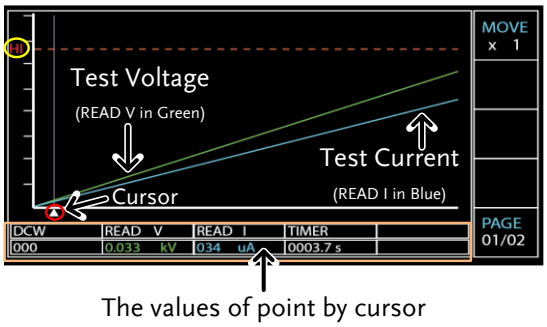


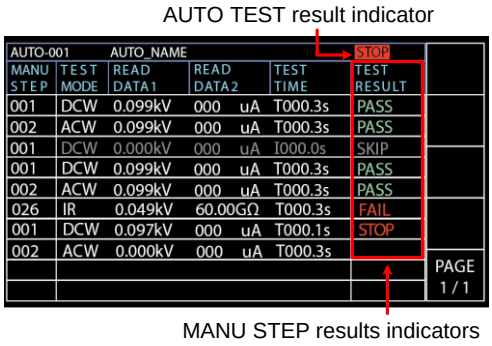


Statistic **Analysis**

The GPT-12000 series provides the statistic function, which can record the test functions and judgment results in the temporary storage area (60,000 lots max.). Users can immediately learn the test of each function during the test without using a PC. The distribution of the good products can be analyzed to understand the quality of the batch based on the data. If most of them fall at the critical point that is close to be categorized as defect product, the results can be found in the test process in time so as to improve the manufacturing process and stop the defect products from entering the markets to ensure the reliability of products after leaving the factory.

Sweep and tabular automatic test



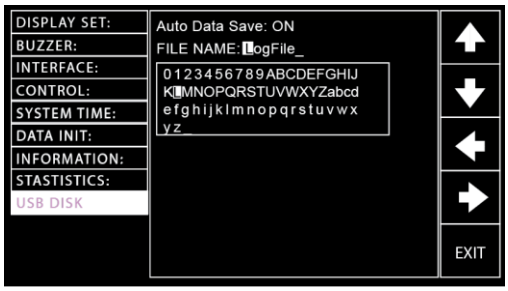


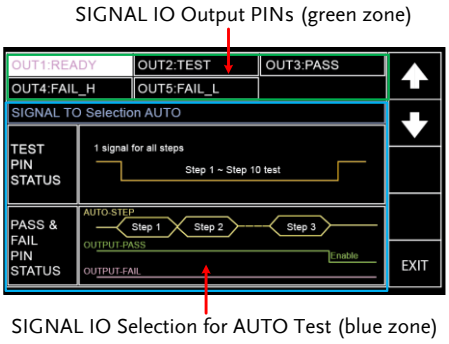
Sweep function **Tabular automatic test**

The GPT-12000 series features a unique sweep function, which displays a curve diagram of the test results of the DUT. Test readings are recorded point by point based on the applied test voltage or current and relevant settings (such as initial voltage, ramp up time, test time, or ramp down time). After the test is completed, users can learn the amount of applied energy (voltage or current) at a specific time point and the results of measurement parameters by moving the cursor position so as to help users understand the changes of the measurement parameters (current or resistance) during the test. The function can also be used to determine the critical break down of the DUT.

With respect to the automatic test function, each automatic test has up to 10 manual test items and all related settings and result judgement are presented in a table, so that users can easily obtain the results of all test items at a time. Other than that, if there are multiple automatic test connection requirements, uses only need to select CON in the last item of the table to automatically connect the automatic measurement of the next position (such as AUTO-012 ~ AUTO-013)

Complete test data retrieval interface





USB storage function **Signal I/O Self-defined Signal I/O**

In order to facilitate users to analyze the results of the safety test, GPT-12000 provides the USB storage function in addition to its own statistic and analysis functions. When a USB is inserted and the storage function is activated, each time the test button (START) is pressed, the test results of all tests (every manual or automatic test item) are automatically saved to the USB in the form of a text file (txt) for follow-up analysis.

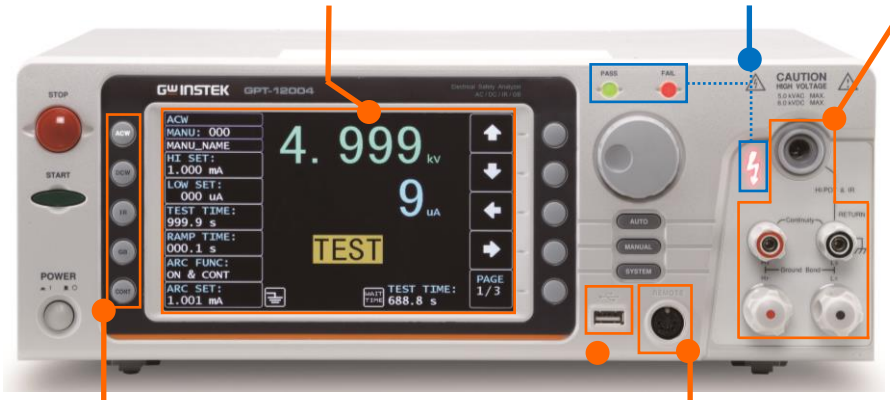
For interface connections, the GPT-12000 series offers external control or a variety of remotely connected ports such as a signal I/O port that can be used to connect an external controller or PLC. The signal I/O's output signal pins can be self-defined so as to collocate with various PLC control requirements. Besides, the entire series is equipped with RS-232C and USB device (GPIB is optional) for easy retrieval of test data and results by connecting a PC.

Key Features

- 200VA AC Test Capacity
- Comply with IEC 61010-2-034
- 7" TFT LCD
- Manual / Auto Mode
- True RMS Current Measurement
- Zero Crossing Turn-on Operation
- Controllable Ramp-up & Ramp-down Time
- Capacitive Load Testing Capability up to 47μF
- Statistics Function
- Sweep Function for DUT Characteristic Analysis
- USB Storage available
- Rear panel output available
- Interface : RS-232C, USB host/device, Signal I/O and GPIB (optional)
- Universal power input

7" TFT LCD, supporting a grater view of setting parameters, testing value as well as Statistics result.

High Intensity LED Indictors to show the Output or Judgment status of Analyzer.



High Voltage Output for AC 5kV, DC 6kV or 50V~1200V in 50V per step for Insulation Resistance testing.

100mA fixed Continuity test function

High Current Output up to 32A ac for 4 wires Ground Bond testing.

Testing Function Selection keys

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

Rear output terminal & Indicator provides safe and convenience for system integration

USB and RS-232 as well as optional GPIB communication ports facilitate the easy & convenient communication.

Universal Power Input & Fuse Holder

Specifications comparison ~ GPT-12004 vs GPT-9804

Specifications highlighted in blue represent better performance

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

(NOTE)

1. **The GPT-9800 series will continue serve in the market.**
2. **GPT-12000 provides better display, adjustment and measurement resolution, ground continuity check, more features such as statistics, analysis, sweep and rear output, more functionalities such as IR mode, listed AUTO mode and user-defined signal I/O output signal, capacitive load test capability up to 47μF and USB storage.**

	MODELS	GPT-12000 Series	GPT-9800 Series
		GPT-12001 : ACW/GC	GPT-9801 : ACW
		GPT-12002 : ACW/DCW/GC	GPT-9802 : ACW/DCW
		GPT-12003 : ACW/DCW/IR/GC	GPT-9803 : ACW/DCW/IR
		GPT-12004 : ACW/DCW/IR/GB/GC	GPT-9804 : ACW/DCW/IR/GB
(※) Functions supports depending on MODELS		**200VA**	**200VA**
AC Withstanding **(ACW)**			
Output-Voltage Range		0.050kV~5.000kV	0.050kV~5.000kV
Output-Voltage Resolution		**1V**	2V
Output-Voltage Accuracy		± (1% of setting + 5V) [no load]	± (1% of setting + 5V) [no load]
Maximum Rated Load		200 VA (5kV/40mA)	200 VA (5kV/40mA)
Maximum Rated Current		40mA (0.5kV< V ≦5kV)	40mA (0.5kV< V ≦5kV)
		10mA (0.05kV≦ V ≦0.5kV)	10mA (0.05kV≦ V ≦0.5kV)
Output-Voltage Waveform		Sine wave	Sine wave
Output-Voltage Frequency		50 Hz / 60 Hz selectable	50 Hz / 60 Hz selectable
Voltage Regulation		± (1% + 5V) [maximum rated load → no load]	± (1% + 5V) [maximum rated load → no load]
Voltmeter Accuracy		± (1% of reading + 5V)	± (1% of reading + 5V)
Current Measurement Range		1μA~40.00mA	0.001mA~40.00mA
Current Best Resolution		1μA / 10μA	0.001mA / 0.01mA/ 0.1mA
Current Measurement Accuracy		±(1.5% of reading + 3μA) when I Reading < 1mA	±(1.5% of reading + 30 counts) when HI SET <1.11mA
		±(1.5% of reading + 30μA) when I Reading ≧1mA	±(1.5% of reading + 3 counts) when HI SET ≥1.11mA
Window Comparator Method		Yes	Yes
ARC Detect		Yes	Yes
RAMP UP (Rise Time)		0.1s~999.9s	0.1s~999.9s
RAMP DOWN (Fall Time)		**0.0s~999.9s**	X

TIMER (Test Time)		**OFF, 0.3s~999.9s**	OFF*, 0.5s~999.9s
WAIT TIME		**0.0s~999.9s**	X
GND		ON/OFF	ON/OFF
DC Withstanding **(DCW)**			
Output-Voltage Range		0.050kV~6.000kV	0.050kV~6.000kV
Output-Voltage Resolution		**1V**	2V
Output-Voltage Accuracy		± (1% of setting + 5V) [no load]	± (1% of setting + 5V) [no load]
Maximum Rated Load		50W (5kV/10mA)	50W (5kV/10mA)
Maximum Rated Current		10mA (0.5kV< V ≦6kV)	10mA (0.5kV< V ≦6kV)
		2mA (0.05kV≦ V ≦0.5kV)	2mA (0.05kV≦ V ≦0.5kV)
Voltage Regulation		± (1% + 5V) [maximum rated load → no load]	± (1% + 5V) [maximum rated load → no load]
Voltmeter Accuracy		± (1% of reading + 5V)	± (1% of reading + 5V)
Current Measurement Range		1μA~10.00mA	0.001mA~10.00mA
Current Best Resolution		**0.1μA** /1μA /10μA	0.001mA / 0.01mA/ 0.1mA
Current Measurement Accuracy		±(1.5% of reading + 3μA) when I Reading < 1mA	±(1.5% of reading + 30 counts) when HI SET <1.11mA
		±(1.5% of reading + 30μA) when I Reading ≧1mA	±(1.5% of reading + 3 counts) when HI SET ≥1.11mA
Window Comparator Method		Yes	Yes
ARC Detect		Yes	Yes
RAMP UP (Rise Time)		0.1s~999.9s	0.1s~999.9s
RAMP DOWN (Fall Time)		**0.0s~999.9s**	X
TIMER (Test Time)		**OFF, 0.3s~999.9s**	OFF*, 0.5s~999.9s
WAIT TIME		**0.0s~999.9s**	X
GND		ON/OFF	ON/OFF
Insulation Resistance **(IR)**			
Output Voltage		50V~**1200V dc**	50V~1000V dc
Output-Voltage Resolution		50V	50V
Output-Voltage Accuracy		± (1% of setting + 5V) [no load]	± (1% of setting + 5V) [no load]
Resistance Measurement			
Test Voltage	Display Range	Measurement Range / Accuracy	Measurement Range / Accuracy
50V≦V≦100V	0.1MΩ~ 10.00GΩ	**0.1MΩ~1MΩ： ±(5% of reading + 3 count)**	X
		1 MΩ~50MΩ： ±(5% of reading + 1 count)	1 MΩ~50MΩ： ±(5% of reading + 1 count)
150V≦V≦450V	0.1MΩ~ 20.00GΩ	51MΩ~2GΩ： ±(10% of reading + 1 count)	51MΩ~2000MΩ： ±(10% of reading + 1 count)

500V≦V≦1200V	0.1MΩ~ 50.00GΩ	**0.1MΩ~1MΩ： ±(5% of reading + 3 count)**	X
		1 MΩ~500MΩ： ±(5% of reading + 1 count)	1 MΩ~500MΩ： ±(5% of reading + 1 count)
		501MΩ~9.999GΩ： ±(10% of reading + 1 count)	501MΩ~9500MΩ： ±(10% of reading + 1 count)
		10GΩ~50GΩ： ±(20% of reading + 1 count)	X
Voltage Regulation		± (1% + 5V) [maximum rated load → no load]	X
Voltmeter Accuracy		± (1% of reading + 5V)	X
Short-Circuit Current		**10mA max.**	X
Output Impedance		**2kΩ**	600kΩ
Window Comparator Method		Yes	Yes
RAMP UP (Rise Time)		0.1s~999.9s	0.1s~999.9s
RAMP DOWN (Fall Time)		**0.0s~999.9s**	X
TIMER (Test Time)		**0.3s~999.9s**	0.5s~999.9s
WAIT TIME		**0.0s~999.9s**	X
GND		**ON/OFF**	OFF
IR Mode		**Available**	X
Ground Bond **(GB)**			
Output-Current		**03.00A~32.00A ac**	03.00A~30.00A ac
Output-Current Resolution		0.01A	0.01A
Output-Current Accuracy		3A≦I≦8A：±(1% of reading + 0.2A)	3A≦I≦8A：±(1% of reading + 0.2A)
		8A<I≦32A：±(1% of reading + 0.05A)	8A<I≦30A：±(1% of reading + 0.05A)
Test-Voltage		8Vac max (open circuit)	6Vac max (open circuit)
Test-Voltage Frequency		50Hz/60Hz selectable	50Hz/60Hz selectable
Ohmmeter Meas.Range		**1mΩ~** 650mΩ	10mΩ~ 650mΩ
Ohmmeter Meas. Resolution		0.1mΩ	0.1mΩ
Ohmmeter Meas. Accuracy		±(1% of reading + 2 mΩ)	±(1% of reading + 2 mΩ)
Window Comparator Method		Yes	Yes
TIMER (Test Time)		**0.3s~999.9s**	0.5s~999.9s
Test Method		Four Terminal	Four Terminal
GND		**ON/OFF**	OFF
Ground Continuity **(GC)**			
Output-Current		**100mA dc (fixed)**	X
Ohmmeter Meas. Range		**0.10Ω~ 70.00Ω**	X
Ohmmeter Meas. Resolution		**0.01Ω**	X

Ohmmeter Meas. Accuracy		**±(10% of reading + 2 Ω)**	X
Memory			
Single Step Memory		MANU：100 blocks	MANU：100 blocks
Automatic Testing Memory		**AUTO：100 blocks, manu per auto：10;** **Allows AUTO in sequence number**	AUTO：100 blocks, manu per auto：16
Special Features			
Sweep Function		**Standard**	X
Statistics		**Standard**	X
User Defined Signal I/O		**Standard**	X
Interface			
Front	REMOTE	Standard	Standard
	USB host	**Standard**	X
Rear	Rear Output	**Standard**	X
	RS-232C	Standard	Standard
	USB device	Standard	Standard
	SCAN Terminal	X	**Standard (for optional GSB-01/02)**
	Signal I/O	Standard	Standard
	GPIB	Option	Option
General			
Display		**7” color LCD**	240 x 64 Ice Blue Dot Matrix LCD
Power Source & Consumption		**AC 100V~240V ± 10%, 50Hz/60Hz;** **Max. 400VA**	AC 100V/120V/230V/240V ± 10%, 50Hz/60Hz; Max. 500VA
DIMENSION & WEIGHT		380(W) x 148(H) x 454(D) mm; **Approx. 15kg**	330(W) x 148(H) x 452(D) mm; Approx. 19kg

Key Dates for Product Announcement

1. Distributor Announcement & Demo Unit Order and Shipping (12th of August)
2. Global Market Announcement (19th of August)

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 GPT-12000 will be posted on the distributor zone of GW Instek Website at https://www.gwinstek.com

Product Outlook

GPT-12004 (Front)

GPT-12003/12002/12001 (Front)

GPT-12004 (Rear)

GPT-12003/12002/12001 (Rear)

(For all models with optional GPIB)

Application and Target Markets

- Production and Compliance Testing of electrical products
  - Power Cord
  - House Appliances
  - Information Technology Equipment
  - Medical Equipment
  - High Capacitive components/ devices
  - 7” TFT 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 10 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
  - 7” TFT 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.
  - Statistics & Analysis function provides
  - Testing condition reserved up to 100 sets memory for multi-production.
  - Up to 10 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
  - 7” TFT LCD display and high intensity status indicators for clear and easy observation.
  - High testing performance, 1V/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.

Specifications

AC WITHSTANDING		
Output-Voltage Range		0.050kV~5.000kV
Output-Voltage Resolution		1V
Output-Voltage Accuracy		± (1% of setting + 5V) [no load]
Maximum Rated Load		200 VA (5kV/40mA)
Maximum Rated Current		40mA (0.5kV< V ≦5kV) 10mA (0.05kV≦ V ≦0.5kV)
Output-Voltage Waveform		Sine wave
Output-Voltage Frequency		50 Hz / 60 Hz selectable
Voltage Regulation		± (1% + 5V) [maximum rated load → no load]
Voltmeter Accuracy		± (1% of reading + 5V)
Current Measurement Range		1μA~40.00mA
Current Best Resolution		1μA / 10μA
Current Measurement Accuracy		±(1.5% of reading + 30μA)
Window Comparator Method		Yes
ARC Detect		Yes
RAMP UP (Rise Time)		0.1s~999.9s
RAMP DOWN (Fall Time)		0.0s~999.9s
TIMER (Test Time)		OFF, 0.3s~999.9s
WAIT TIME		0.0s~999.9s
GND		ON/OFF
DC WITHSTANDING		
Output-Voltage Range		0.050kV~6.000kV
Output-Voltage Resolution		1V
Output-Voltage Accuracy		± (1% of setting + 5V) [no load]
Maximum Rated Load		50W (5kV/10mA)
Maximum Rated Current		10mA (0.5kV< V ≦6kV) 2mA (0.05kV≦ V ≦0.5kV)
Voltage Regulation		± (1% + 5V) [maximum rated load → no load]
Voltmeter Accuracy		± (1% of reading + 5V)
Current Measurement Range		1μA~10.00mA
Current Best Resolution		0.1μA /1μA /10μA
Current Measurement Accuracy		±(1.5% of reading + 3μA) when I Reading < 1mA ±(1.5% of reading + 30μA) when I Reading ≧1mA
Window Comparator Method		Yes
ARC Detect		Yes
RAMP UP (Rise Time)		0.1s~999.9s
RAMP DOWN (Fall Time)		0.0s~999.9s
TIMER (Test Time)		OFF, 0.3s~999.9s
WAIT TIME		0.0s~999.9s
GND		ON/OFF
INSULATION RESISTANCE		
Output Voltage		50V~1200V dc
Output-Voltage Resolution		50V
Output-Voltage Accuracy		± (1% of setting + 5V) [no load]
Resistance Measurement		
Test Voltage	Display Range	Measurement Range / Accuracy
50V≦V≦100V	0.1MΩ~ 10.00GΩ	0.1MΩ~1MΩ：±(5% of reading + 3 count) 1 MΩ~50MΩ：±(5% of reading + 1 count) 51MΩ~2GΩ：±(10% of reading + 1 count)
150V≦V≦450V	0.1MΩ~ 20.00GΩ	
500V≦V≦1200V	0.1MΩ~ 50.00GΩ	0.1MΩ~1MΩ：±(5% of reading + 3 count) 1 MΩ~500MΩ：±(5% of reading + 1 count) 501MΩ~9.999GΩ：±(10% of reading + 1 count)

	10.00GΩ~50.00GΩ：±(20% of reading + 1 count)*
Voltage Regulation	± (1% + 5V) [maximum rated load → no load]
Voltmeter Accuracy	± (1% of reading + 5V)
Short-Circuit Current	10mA max.
Output Impedance	2kΩ
Window Comparator Method	Yes
RAMP UP (Rise Time)	0.1s~999.9s
RAMP DOWN (Fall Time)	0.0s~999.9s
TIMER (Test Time)	OFF, 0.3s~999.9s
WAIT TIME	0.0s~999.9s
GND	ON/OFF
Ground Bond	
Output-Current	03.00A~32.00A ac
Output-Current Resolution	0.01A
Output-Current Accuracy	3A≦ I≦ 8A：±(1% of reading + 0.2A) 8A<I≦ 32A：±(1% of reading + 0.05A)
Test-Voltage	8Vac max (open circuit)
Test-Voltage Frequency	50Hz/60Hz selectable
Ohmmeter Measurement Range	1mΩ~ 650mΩ
Ohmmeter Measurement Resolution	0.1mΩ
Ohmmeter Measurement Accuracy	±(1% of reading + 2 mΩ)
Window Comparator Method	Yes
TIMER (Test Time)	0.3s~999.9s
Test Method	Four Terminal
GND	ON/OFF
Continuity Test	
Output-Current	100mA dc (fixed)
Ohmmeter Measurement Range	0.10Ω~ 70.00Ω
Ohmmeter Measurement Resolution	0.01Ω
Ohmmeter Measurement Accuracy	±(10% of reading + 2Ω)
Window Comparator Method	Yes
TIMER (Test Time)	0.3s~999.9s
MEMORY	
Single Step Memory	MANU：100 blocks
Automatic Testing Memory	AUTO：100 blocks, manu per auto：10
INTERFACE	
Front panel	REMOTE terminal, USB host
Rear panel	Rear Output, RS-232C , USB device, Signal I/O, GPIB (Optional)
DISPLAY	
	7” color LCD
POWER SOURCE	
	AC 100V~240V ± 10%, 50Hz/60Hz; Consumption: 400VA
DIMENSION & WEIGHT	
	380(W) x 148(H) x 454(D) mm; Approx. 15kg

* When Ground Mode is “ON”, the measurement range is 30GΩ max. and adding 10% error for accuracy.

Ordering information

GPT-12004	AC 200VA AC/DC/IR/GB Electrical Safety Analyzer
GPT-12003	AC 200VA AC/DC/IR Electrical Safety Analyzer
GPT-12002	AC 200VA AC/DC Withstanding Voltage Electrical Safety Analyzer
GPT-12001	AC 200VA AC Withstanding Voltage Electrical Safety Analyzer

(*) Two years warranty, excluding accessories

Included Accessories

Quick Start Guide x 1, CD x1(completed user manual), Power cord x 1,
Interlock key x 1, Remote terminal Cable GHT-119 x 1,
Test lead GHT-115 x 1 for GPT-12003/12002/12001
Test lead GHT-115 x 1, GTL-215 x 1 for GPT-12004

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-246	USB Cable, A-B type, approx. 1.2m
GTL-248	GPIB Cable, approx. 2m

Should you have any questions on the GPT-12000 announcement, please don't hesitate to contact us.

Sincerely yours,

Overseas Sales Department
Good Will Instrument Co., Ltd
No. 7-1, Jhongsing Road, Tucheng Dist.,
New Taipei City 236, Taiwan
Email: marketing@goodwill.com.tw

Website Facebook LinkedIn