MULTI-CHANNEL HIPOT TESTER
MODEL 19020

High Efficiency Hipot Test Solution
Hipot test is one of the major test items in electrical safety test. All electrical components and products including transformers, capacitors, power supplies, chargers and home appliances all require hipot test.

With more than 20 years experience in developing the instruments for test and measurement, Chroma creates the 19020 multi-channel hipot tester with a brand new architecture. It can measure the hipot leakage current of all channels at the same time and conduct tests on 100 DUTs at most simultaneously.

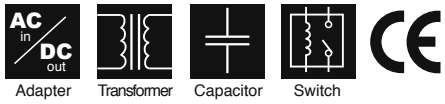
There is no need to purchase various Hipot testers to save the production line space up to 50% if Chroma 19020 is in use. Its one time multi-channel test can increase the efficiency of electrical regulatory test. It improves the productivity and reduces the risk of test for the products that require hipot test only.

Chroma 19020 also has powerful functions in Flashover detection and Open/Short Check. It contains several international patents and is the best tool for electrical regulatory hipot test as not only reliable quality can be obtained, highly efficient test platform can be created.

World's First Sync Hipot Test (Patent Registered)
Chroma 19020 has equipped with the world's first sync hipot test function that one single unit can perform 10 channels sync output and measurements simultaneously. Maximum 10 units (master & slave) can be controlled to have 100 channels in total. They can be grouped for output to avoid creating voltage difference due to adjacent tests as well as to improve the productivity.

Application
Chroma 19020 can be applied to various electrical products including the time-consuming tests such as quality assurance sampling test and production line test.

- Power cord
- Capacitor
- Resistance
- Switch
- Connector
- Transformer
- Charger
- Adapter



MODEL 19020

Key Features :

- 10 channels in one design
- 10 sets of sync output and measurement
- AC/DC/IR 3 in 1 EST test
- Master/Slave link - 10 units max.
- Programmable V-output and limits
- OSC (Open/Short Check)
- Flashover detection
- 5KVAC & 6KV DC hipot test
- 1MΩ~50GΩ insulation resistance test
- Standard RS232 / Handler interface
- Optional GPIB interface
- Large LCD panel
- Panel lockup function
- Easy operating interface
- CE Mark

Chroma

SYNCHRONOUS HI-POT TEST

The issue frequently encountered when testing multiple DUTs for hipot is unable to synchronize output. When planning for production line or automation, minimized facility and optimized space are often utilized in the plant; therefore, the distance between two DUTs will be very short. Taking the output voltage 5kVac for example, when the output of hipot tester is not synchronized, the two DUTs may create a discharge of high voltage difference (up to14kV peak-peak) and cause the fixture to be damaged and error judgment. Chroma 19020 synchronizes the output signal so there is no high voltage difference on adjacent two ends that not only can extend the life of production equipment but also reduce the misjudgment for occurring.

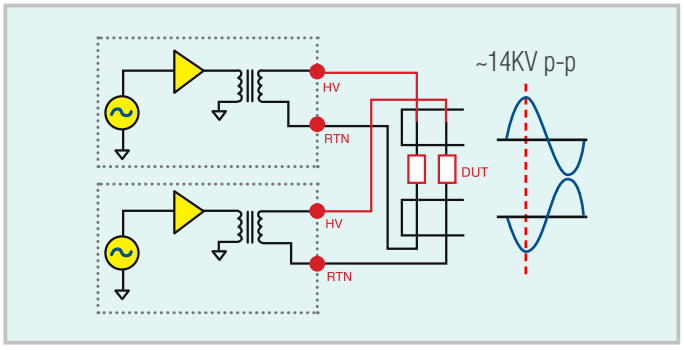


Figure 1 : Unsynchronized Output

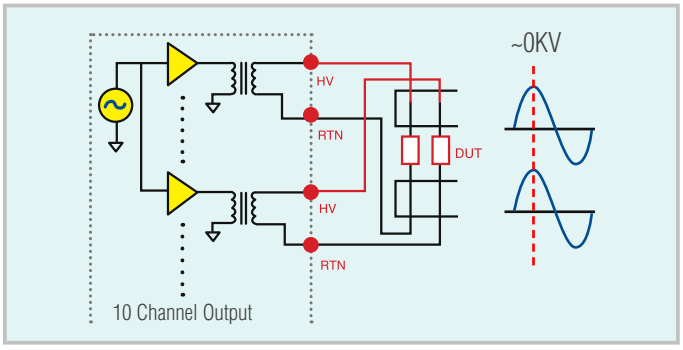


Figure 2 : Synchronized Output

FLASHOVER DETECTION

Same as other Chroma EST test series 19020 has Flashover detection function. Flashover is the electrical discharge generated by high electric field inside or on the surface of insulation material that makes the DUT lost its insulation and form a transient or discontinuous discharge. It causes the conductive path to be carbonated or the product to be damaged. Test for leakage current only is unable to screen out the defects. It is necessary to test the voltage or current for its change ration to screen out the defects. Thus Flashover detection is one of the most indispensable test items.

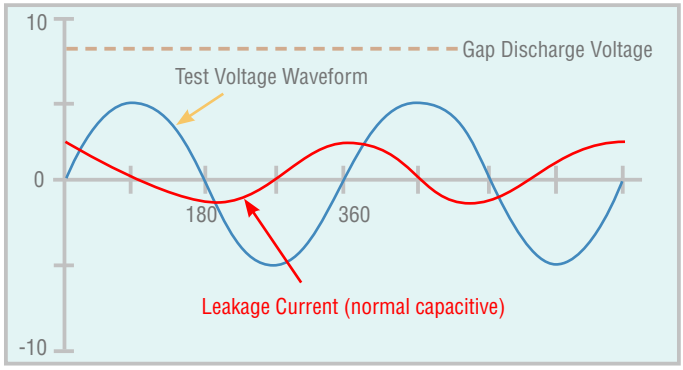


Figure 1 : Normal Leakage Current Waveform

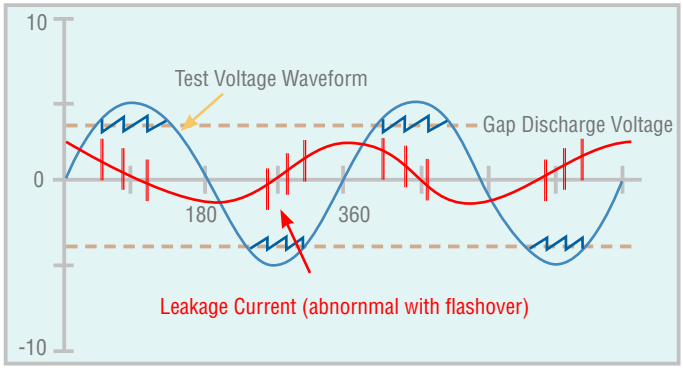


Figure 2 : Leakage Current Waveform when Flashover occurred

OPEN / SHORT CHECK (OSC)

OSC is to check if there is any Open (bad connection) or Short (DUT short circuited) occurred during test. It may misjudgment the defect product to be good if Open occurs during test. The short circuited DUT can be filtered out to diminish the damage to fixture and save the test cost if short is found earlier.

In general, capacitance (Cx) is presented when Hipot Testers are testing products. It could be between several 10pF to μF in normal mode. Once connection is interrupted, a small capacitance (Cc in Figure 2) will be generated on break interface that is lower than 10pF. It makes the entire capacitance lower than normal products. The capacitance may higher than the normal products when the DUT is short-circuited or near short circuit. Thus the high/low limit of capacitance variation can be used to identify the short circuit problem.

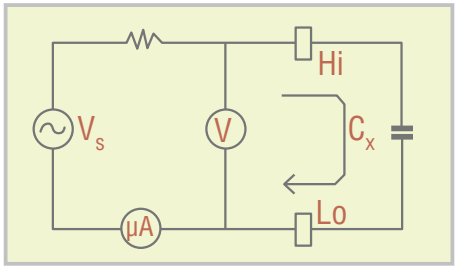


Figure 1 : Normal Connection

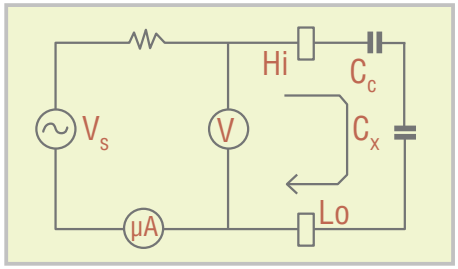


Figure 2 : Connection Open

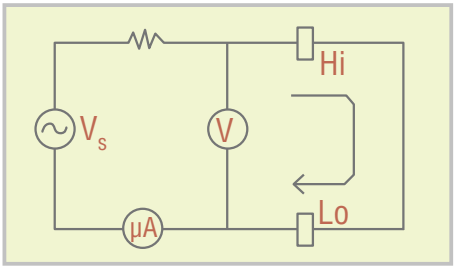
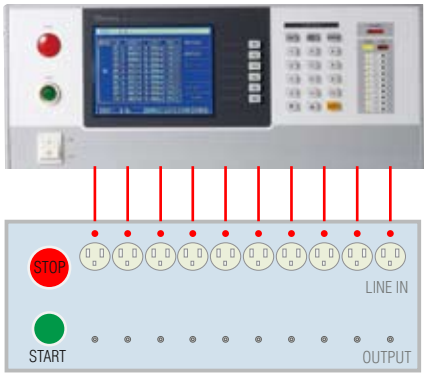


Figure 3 : Connection Short

APPLICATION

Chroma 19020 can apply to various electrical parts and products by testing a number of DUTs at one time with the multi-channel hipot test. The applications include :

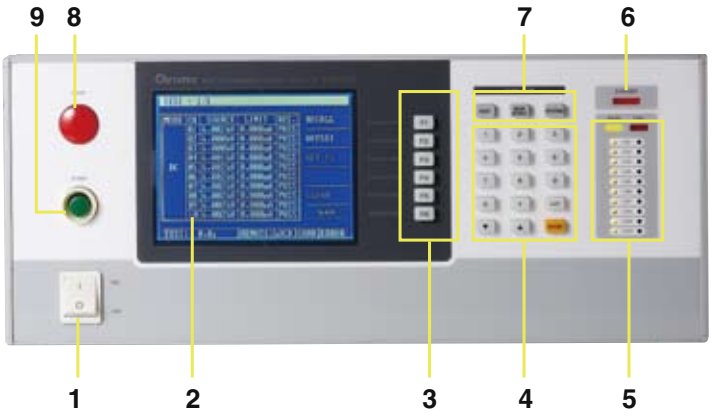
- Automation of power cord and related cable material
- Automation of capacitor and resistance
- Insulation test of switch and connector
- One time test for transformer with multiple pins or multiple pieces
- Production planning for charger and adapter

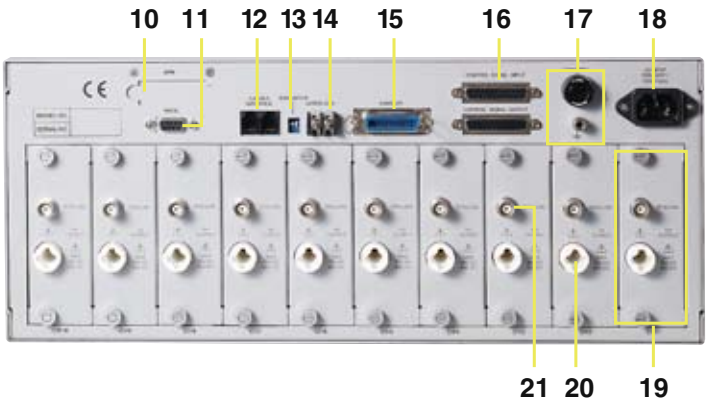


Related accessories and fixtures for various test solutions are applicable at request. Please contact the local service personnel of Chroma to obtain the most up-to-date information.

PANEL DESCRIPTION

1. Power Switch
2. LCD Display
3. Function Keys
4. Cursor Keys and Enter Key
5. PASS/FAIL LED lamps
6. Danger LED lamps
7. SYSTEM Keys
8. STOP Key
9. START Key
10. GPIB Interface (option)
11. RS232 Interface
12. Internal communication interface
13. Terminator
14. Interlock
15. Handler Interface
16. Internal Control Interface
17. Fuse and Earth Terminal
18. AC Input
19. HV Output Module
20. High Voltage Terminal
21. Return/Low Terminal





Pin No.	Signal Name	Input/output	Description
1~10	CHN1 ~ 10	OUTPUT	Results of CH1~10
11	nPASS_FAIL	OUTPUT	Total PASS/FAIL
12	nEOT	OUTPUT	TEST end signal
13	EXT_START	INPUT	External START
14	EXT_STOP	INPUT	External STOP
15	+VEXT	INPUT	External Vdc
16~19	Rcall 1~4	INPUT	Recall memory
20	+5VHan	OUTPUT	Internal Vdc
22	GNDF	-----	Common pin for +VEXT
23	GD3	-----	Common pin
24	nPA_MODE	OUTPUT	PA_MODE SIGNAL OUTPUT

SPECIFICATIONS

Model	**19020**	
Mode	**ACV/DCV/IR/Multi-Channel**	
Withstanding Voltage Test		
Output Voltage	AC : 0.05 ~ 5KV, DC : 0.05 ~ 6KV	
Load Regulation	2% of setting + 0.1% of full scale	
Voltage Regulation	2V	
Voltage Accuracy	2% of setting + 0.1% of full scale	
Cutoff Current	AC : 0.01 ~ 10mA, DC : 0.001 ~ 5mA	
Current Resolution	AC : 1μA, DC : 0.1 μA	
Current Accuracy	1% of setting +0.5% of full scale	
Output Frequency	50Hz / 60Hz	
Flashover Detection	AC : 1mA ~ 15mA, DC : 1mA ~ 5mA , step 0.1mA	
Test Time	0.03 ~ 999.9 sec, continue	
Ramp Time	0.1 ~ 999.9 sec, off	
Fall Time	0.1 ~ 999.9 sec, off	
Dwell Time	0.1 ~ 999.9 sec, off	
Waveform	Sine wave	
Insulation Resistance Test		
Output Voltage	DC : 0.05 ~ 1kV	
Voltage Resolution	2V	
Voltage Accuracy	2% of setting + 0.1% of full range	
IR Range	1MΩ ~ 50GΩ	
Resistance Accuracy	≥ 500V	1MΩ ~ 1GΩ : ± 3% of reading + 0.1% of full range 1GΩ ~ 10GΩ : ± 7% of reading + 0.2% of full range 10GΩ ~ 50GΩ : ± 10% of reading + 1% of full range
	≤ 500V	1MΩ ~ 1GΩ : ± 3% of reading + (0.2*500/Vs)% of full scale
Test Time	0.3 ~ 999.9 sec, continue	
Memory Storage		
Save/Recall	30 instrument setups with up to 10 test steps can be stored into and recalled from the internal memory	
Secure Protection Function		
Fast Output Cut-off	0.4ms after NG happen	
Panel Operation Lock	Present password	
Interlock	YES	
GO/NG Judgment Window		
Indication, Alarm	GO : Short sound, Green LED NG : Long sound, Red LED	
Data Hold	Least tests data memories	
Memory Storage	30 instrument setups with up to 10 test steps	
Interface		
RS232 & Handler (Standard), GPIB (Optional)		
CANBUS & data control interface are used for Max. 10 units of master & slaves connection		
General		
Operation Environment	18 to 28°C (64 to 82°F), 70% RH. Maximum relative humidity 80% for temperature up to 31°C (88°F) Decreasing linearly to 50% relative humidity at 40°C (104°F)	
Power Consumption	Standby : < 250W ; With rated load : <1000W	
Power Requirements	AC 100V~240V, 47~66 Hz	
Weight	Approx.40 KG	

*All specifications are subject to change without notice.

ORDERING INFORMATION

19020 : Multi-Channel Hipot Tester

A190200 : Master / Slave

A190508 : GPIB Interface Card

* HV cable is option for customize requirement

Developed and Manufactured by :

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