
ДАТЧИКИ ЭЛЕКТРОБЕЗОПАСНОСТИ

19032, 19032-P, 19071, 19073, 19052, 19053, 19054,
19036, 19035, 19035-M, 19035-S, 19020, 19020-4, 19021,
19022, 19022-4, 19055, 19056, 19057, 19057-20

ТЕХНИЧЕСКИЕ ХАРАКТЕРИСТИКИ

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MODEL 19032/19032-P

Key Features :

- AC/DC/IR/GB/LC five instruments in one
- Function test up to 20A
- Programmable voltage output and limit value
- OSC open/short check
- Flashover detection
- Human protection circuit
- Multi-scan device support dynamic leakage current test
- Standard RS232 interface
- Optional GPIB interface
- Large LCD panel
- Front panel lockout function
- Support PC software
- UL/TUV/CE

Key Features 19032-P :

- 500VA output
- Floating output , compliance with EN50191
- USB interface, compatible with USB TMC
- GFI human body protection circuit
- CE certification (only)

ELECTRICAL SAFETY ANALYZER

MODEL 19032/19032-P

General Electrical Safety Testing Solution

Electrical safety testing is one of the major item in the electrical product quality tests. All electrical products consisting of adapter, SMPS, charger, house appliance, information technology product and video product are required to perform electrical safety tests.

The 19032 series combines Hi-Pot, IR, GB, LC/ALC/DLC and Dynamic Function Test. That can save 50% of production line space without purchasing several Hi-Pot testers , 19032 is able to increase efficiency of electrical safety test during manufacturing and reduce the risk on testing.

Open/Short Check (OSC)

Patent No. : 254135

All manufacturers have to solve the problems of error connections and unconnected test cables caused by the production line testers. 19032 equipp with the up-to-date open/short check function (OSC) for product testing.It can free the tests from such problem.

Twinport™ Function

USA Patent No.: US6504381

The key factor affecting the efficiency of manufacturing is the efficiency for electrical safety test. Twinport function can lower the time for safety test, and safety workstation will no longer be a bottleneck in production line.

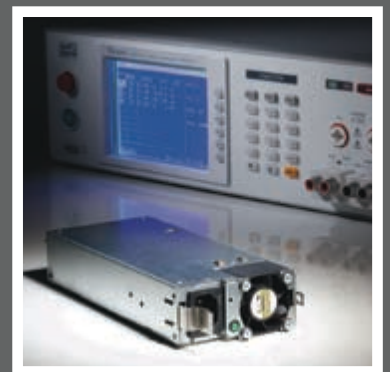
Product Application

The 19032 can be applied to versatile tests of electrical products which include quality assurance sampling inspection test, manufacturing test and development validation.

- Power cord
- Adapter, SMPS
- House appliance
- Information technology product
- Medical equipment
- Lab/testing equipment
- EMI FILTER

EN50191 Floating Output Function

The leakage current of any ground terminal should be lower than 3.5mA when operating Floating output function. Therefore, the operator who near to potential ground terminal can avoid electrical hazard.



SPECIFICATIONS

Model	19032	19032-P
Mode	AC/DC/IR/GB/LC	
Withstanding Voltage Test		
Output Voltage	DC:0.05 ~ 6kV , AC : 0.05 ~ 5kV	
Load Regulation	±(1% reading +0.1% range)	±(2% reading +0.1% range)
Voltage Resolution	2V	
Voltage Accuracy	±(1% reading +0.1% range)	±(2% reading +0.1% range)
Cutoff Current	DC : 20mA , AC : 40mA	DC : 20mA , AC : 100mA
Current Resolution	0.1 μA DC ; 1μA AC	
Current Accuracy	±(1% reading +0.1% range)	±(2% reading +0.5% range)
Output Frequency	50Hz / 60Hz	
Test Time	0.3 ~ 999 sec , continue	
Ramp Time	0.1 ~ 99.9 sec, Off	
Fall Time	0.1 ~ 99.9 sec, Off	
Waveform	Sine wave	
Insulation Resistance Test		
Output Voltage	DC : 0.05 ~ 1kV	
Voltage Resolution	2V	
Voltage Accuracy	±(2% of reading +0.5% of range)	
IR Range	1MΩ ~ 50GΩ	
Resistance Resolution	0.1MΩ	
Resistance Accuracy	5% typical	
Ground Bond Test		
Output Current	AC : 1 ~ 30A	AC : 3 ~ 40A
Current Accuracy	±(1% of reading +0.2% of range)	
GR Range	10mΩ ~ 510mΩ	
Resistance Resolution	0.1mΩ	
Resistance Accuracy	± (1% of reading + 0.1% of full scale)	
Test Method	4 wires	
Flashover Detection		
Setting Mode	Programmable setting	
Detection Current	AC : 20mA, DC : 10mA	
Secure Protection Function		
Ground Fault Interrupt	-	0.5mA ±0.25mA AC
Floating Output	-	3.5mA, front output only
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	50 setups with up to 100 groups recall	
Interface		
9pin D-sub I/O control / RS232 / GPIB (Optional) / USB TMC (19032-P)		
General		
Operation Environment	Temperature : 0°C ~ 40°C, Humidity : ± 80 % RH	
Power Consumption	No load : < 100 W With Rated load : 800 W	No load : < 100W Rated load : 1000W Maximum load : 1200W
Power Requirements	90~132Vac or 198~264Vac, 47~66Hz	
Weight	Approx. 20KG(19032) 25KG (19032-P)	

Option	6000-04 ~ 08*
Support Mode	AC/DC/IR/LC
DUT Input Power Capacity	AC : 300V / 10A / 20A max.
Short Protection	20A, 250V fuse for DUT shorted.
Measurement Mode	
Input Characteristic	DC - 1MHz Input Impedance : 1M//20pF
Measurement Mode	Normal, Reverse, Single Fault Normal, Single Fault Reverse
Measurement Devices (Five measure device)	UL 544 NP ; UL 544 P UL 1563 ; UL 60601-1, IEC60601-1; UL 3101-1, UL/IEC 60950, UL 1950-U1* ; UL 2601-U1* IEC60990
Probe Connection	Line to Ground, Line to P2, P1 to P2
HI-LO Limit	
LC HI-LO Limit	0 ~ 9.99mA, 1μA resolution
Current HI-LO Limit	0 - 19.99Amp*
VA HI-LO Limit	0 - 4400VA
VA Resolution	0.1VA

*Different option have different specification.

MODEL 19070 SERIES 19050 SERIES

Key Features

- AC/DC/IR 3 in 1 hipot tester
- AC 5kV and DC 6kV output
- 1kV insulation resistance test
- Insulation resistance measurement from 1M Ω to 50G Ω
- Ground continuity check
- Standard RS-232 interface
- Open short check(OSC) function
- GFI shutdown the instrument when imbalance current > 0.5mA
- Flashover (ARC) detection
- Quick discharge of DUT in IR and DC test
- Pause mode
- UL and TUV approved (*see spec)
- CE mark
- Programmable ramp/fall and test time
- Programmable high/low limit
- Save/Recall program test function
- Remote control and interface support

AC/DC/IR HIPOT TESTER MODEL 19070 & 19050 SERIES

Complete Dielectric Testing Solution

The 19050 series electrical safety testers are advanced digital hipots with load and line regulation to ensure the measurement integrity. Multi-step capability allows users to perform multiple tests in a sequence such as AC hipot followed by IR.

The Hipot Tester 19050 series provides 3 models for choice. The 19052 is for AC/DC/IR Hipot testing and insulation resistance (IR) measurements. The 19053 IR measurement is with 8 scan channels, and the 19054 IR measurement is with 4 scan channels capability into a single compact unit.

The Hipot Tester 19070 series provides 2 models for choice. The 19071 is for AC Hipot testing. The 19073 combines both AC and DC Hipot with insulation resistance (IR) measurements into a single compact unit.

Open Short Check (OSC)

The OSC function is used to check whether the connection is open circuit between instrument and DUT or breakdown inside DUT before testing the electrical safety.

Flashover (ARC) Detection

The 19070 and 19050 series are sensitive enough to monitor current spikes even if they do not exceed the maximum trip current level.

Ground Continuity Check

All of the 19050 series testers have a ground continuity check feature to determine the resistance, that is between the ground blade of power cord and any exposed metal on the product, is less than 1 Ω .

Ground Fault Interrupt (GFI)

GFI is required by the National Electrical Code in wet locations. Such devices automatically interrupt power when a ground current > 0.5mA existed for more than a few milli-seconds to protect users.

Quick Discharge

In DC hipot and IR test the device under test is discharged back through the HV transformer. This technique results in a rapid and safe discharge.



SPECIFICATIONS

Model	19071	19073	19052	19053	19054
Mode	AC	AC/DC/IR	AC/DC/IR	AC/DC/IR/SCAN	
Scanner Unit	-	-	-	8 ports,±phase	4 ports,±phase
Withstanding Voltage Test					
Output Voltage	AC : 0.05 ~ 5kV, DC : 0.05 ~ 6kV				
Load Regulation	1% of setting + 5V				
Voltage Resolution	2V				
Voltage Accuracy	1% of setting + 5 count				
Cutoff Current	AC : 0.1~20mA, DC : 0.01 ~ 5mA		AC : 0.1 ~ 30mA, DC : 0.01 ~ 10mA		
Current Resolution	AC : 1μA, DC : 0.1μA				
Current Accuracy	1% of setting + 5 count				
Output Frequency	50Hz / 60Hz				
Test Time	0.3 ~ 999 sec., continue				
Ramp Time	0.1 ~ 999 sec., off				
Fall Time	0.1 ~ 999 sec., off				
Dwell Time	0.1 ~ 999 sec., off				
Waveform	Sine wave				
Insulation Resistance					
Output Voltage	-	DC : 0.05 ~ 1kV			
Voltage Resolution	-	2V			
Voltage Accuracy	-	± (1.5% of reading + 5 counts)			
IR Range	-	1MΩ~50GΩ		1MΩ~10GΩ	
Resistance Accuracy	≥ 500V	1.00MΩ ~ 25.00MΩ	-	± (5% of reading + 2% of full scale)	
		22.0 MΩ ~250.0MΩ	-	± (5% of reading + 5% of full scale)	
		0.220GΩ ~1.000GΩ	-	± (10% of reading + 2% of full scale)	
		1.000GΩ ~2.500 GΩ	-	± (15% of reading + 5% of full scale)	
	≤ 500V	2.20GΩ ~10.00GΩ	-	± (15% of reading + 1% of scale)	
		10.00GΩ ~50.00GΩ	-	-	
		0.10 MΩ ~25.00MΩ	-	± (10% of reading + 2% of full scale)	
		22.0MΩ ~250.0MΩ	-	± (10% of reading + 5% of full scale)	
		0.220 GΩ ~1.000GΩ	-	± (10% of reading + 5% of full scale)	
Flashover (ARC) Detection					
Setting Mode	Programmable setting				
Detection Current	AC : 1mA ~ 15mA, DC : 1mA ~ 5mA		AC : 1mA ~ 15mA, DC : 1mA ~ 10mA		
Secure Protection Function					
Fast Output Cut-off	0.4ms after NG happen				
Ground Fault Interrupt	0.5mA ±0.25mA AC, ON/OFF				
Panel Operation Lock	Present password				
Continuity Check	1Ω ± 0.2Ω, ON/OFF				
GO/NG Judgment Window					
Indication, Alarm	GO : Short sound, Green LED ; NG : Long sound, Red LED				
Data Hold	Least tests data memories				
Memory Storage	60 steps in 60 groups		500 steps in 99 groups		
Remote & Interface					
Remote control	Input : Start, Stop, Interlock (at 11 pin terminal block only) ; Output : Under test, Pass, Fail				
Communication Interface	RS485 (Option)		RS232 (Standard), GPIB (Option).		
General					
Operation Environment	Temperature : 0°C~40°C, Humidity : 15% to 95% R.H@≤40°C				
Power Requirements	100V/120V/220V/240V (AC ±10%), 50/60Hz				
Power Consumption	300W		500W		
Dimension (W x H x D)	270 x 105 x 350 mm		320 x 105 x 400 mm		
Weight	Approx.12 KG		Approx.15 kg		
Certification	UL, TUV, CE		UL, TUV, CE	CE	UL, TUV, CE

*All specifications are subject to change without notice.

MODEL 19200

Key Features :

- Support Electrical Safety Test:
 - Withstanding Voltage Test
 - Insulation Resistance Test
 - Ground Bond Test
 - Earth Leakage Current Test
 - Enclosure Leakage Current Test
 - Patient Leakage Current Test
 - Patient Auxiliary Leakage Current Test
- Support High / Low voltage circuit insulation (Switch module)
- Support 8 slots for plug-in (removable)
- Max.8 units for multiple scanners (master/slave interface)
- Standard RS232 and USB interface
- Optional GPIB interface
- CE Mark
- 19200 Can be installed in Electrical Equipment ATS model 8900.



ELECTRICAL SAFETY TEST SCANNER MODEL 19200

In recent years, International Electrotechnical Commission (IEC) in order to make consumers safer while using the electrical products, join more requirements to test in the standard. In addition to AC/DC Hi-Pot (Withstanding Voltage) test, IR (Insulating Resistance) test, impulse test of component, GB (Ground Bond) test, ELC (Earth Leakage Current) test, we also need to test ECLC (Enclosure Leakage Current), PLC (Patient Leakage Current), PALC (Patient Auxiliary Leakage Current) for Medical Equipment Electrical Safety Test. It makes electric to fit requirements by all tests be performed which are very complicated and different. The problem not only the course is complicated and apt to make mistakes, but also the manpower costs more.

19200 can perform high / low voltage switching and scan all safety tests with EST Analyzer (19032) inputs. All channels can perform 5kVac/6kVdc and 40mA for withstanding test; Some modules support 20A for Leakage Current test and Function Test; GB & GBF modules support 40A and Ground Floating. All output controls operated by RS232, GPIB or USB interface.

19200 can be installed in 8900 electrical equipment ATS for DUT which needs a lot of procedures to test like medical equipment, medical power, UPS, motor, etc., ATS can save the manpower cost , reduce manual mistake, data management to improve quality and efficiency.

Removable and Master/Slave design

Because different products have different requirements and test procedures, 19200 offers different scanning modules for combinations. These modules are: AC LINE module, GENERAL module, AC LINE2 module. EARTH module, GB&GBF module and SWITCH module. Due to different modules have different functions, users are able to combine different modules for your needs.

19200 can support max. 288 test points by 8 removable slots for module plug-in and Max. 8 units for multiple scanners (master/slave). User can directly program different test circuits and report editors, what has been made many kinds of associations by switching.

High / Low voltage circuit insulation

Most of products have to perform Electrical Safety Test (high voltage) and Function Test (low voltage). 19200 supports high and low voltage isolation by SWITCH module. User can combine high and low voltage tests like LCR measurement, power performance and function test for one sequence in one station and data collecting. That improves test efficiency and reduces occurred test risk.



MODEL 19036

Key Features :

- 5 in 1 (10 channels) composite analyzer (ACWV / DCWV/ IR / Impulse / DCR)
 - Hi-pot test
 - 5kVac / 6kVdc
 - HSCC(High Speed Contact Check)
 - 500 VA output
 - Insulation Resistance test
 - 5kV Max.
 - Impulse Winding Test (IWT)
 - 6kV impulse voltage
 - High sampling rate (200MHz)
 - DCR measurement
 - 4-wire DCR measurement
 - Δ / Y motor winding calculation
- Support max. 40 channels scanning test
- English, Traditional Chinese and Simplified Chinese User Interface
- USB waveform storage& Hard copy function
- Graphic color display
- Standard LAN,USB,RS232 interface
- GFI (Ground Fault Interrupt) for body protection

WOUND COMPONENT EST ANALYZER MODEL 19036

19036 is the industry's first Wound Component Electrical Safety Test (EST) Analyzer that combines the functions of impulse test, hipot, insulation resistance and DC resistance measurements. It has 5kVac/ 6kVdc high voltage output, 5kV insulation resistance, 6kV layer short impulse voltage and 4-wire DC resistance measurement that can comply with the wound components test demands by providing maximum 10 channels output for multichannel scanning tests to save time and labor costs.

The test items for wound components include AC/DC hipot test, IR test, IWT (Impulse Winding Test) and DCR (DC Resistance). integrates the above tests into 19036 Wound Component EST Analyzer that can perform safety tests on wound components like motors, transformers and solenoid valves to verify their quality.

Poor insulation of coil often causes layer short, cross-line short or pin short during usage, and the reason could be initial design error, poor fabrication process or bad insulation material. Thus, to add layer short test in the electrical safety test manufacturing process can complete the scanning test for multiple windings at once to increase the quality of wound components.

Combining the layer short testing function, the 19036 has 6kV impulse voltage with area, differential area, Flutter and Laplacian judgments to supply effective measures for inspecting poor coil insulation.

The 19036 is equipped with a patented 4-wire DC resistance test that has both Drive and Sense in compliance with withstanding specification to provide 10 channels of 4-wire DC resistance test functions. Up to 40ch of scanning test can be conducted when the 19036 is configured with 16ch scan boxes.

The 19036 also has HSCC functions to scan multiple windings rapidly for normal connection. It can solve the test fail problems caused by bad contact of cabling or test fixture.

The motor standard such as UL 1004-1 requires high power safety tester. 19036 with the capability of outputting & measuring AC100mA/DC 20mA is suitable for testing large leakage current or big electrical safety equipment. 19036 as a comprehensive tester integrated with high power hipot test and other safety tests can bring the maximum benefit to the production line as well as to quality assurance. Its 500VA design is also compliant with the output power requirements of EC/UL.



SPECIFICATIONS

Model		19036
AC/DC Withstanding Test		
Output Voltage		AC: 0.05~5.0kV / DC : 0.05~6.0kV
Load Regulation		≤(1% of output + 0.1% of full scale)
Voltage Accuracy		± (1% of setting + 0.1% of full scale)
Voltage Resolution		2V
Cutoff Current		AC: 0.001mA~120mA (Voltage ≤4kV) AC: 0.001mA~100mA (Voltage >4kV) DC: 0.0001mA~20mA
Current Accuracy		± (1% of reading + 0.5% of range)
Test Timer		Test time:0.3 ~ 999 sec., and continue Ramp / Fall / Dwell time:0.1 ~ 999 sec., and off
Output Frequency		50Hz / 60Hz (for AC)
Waveform		Sine wave (for AC)
Insulation Resistance Test		
Output Voltage		DC : 0.050 ~ 5.000kV, Steps : 0.002kV
Load Regulation		≤(1% of output + 0.1% of full scale)
Voltage Accuracy		± (1% of setting + 0.1% of full scale)
IR Range		0.1MΩ ~ 50GΩ
Resistance Accuracy	>1kV	1MΩ ~ 1GΩ : ± (3% of reading + 0.1% of full range) 1GΩ ~ 10GΩ : ± (7% of reading + 2% of full range) 10GΩ ~ 50GΩ : ± (10% of reading + 1% of full range)
	≥0.5kV and ≤1kV	0.1MΩ ~ 1GΩ : ± (3% of reading + 0.1% of full range) 1GΩ ~ 10GΩ : ± (7% of reading + 2% of full range) 10GΩ ~ 50GΩ : ± (10% of reading + 1% of full range)
	<0.5kV	1MΩ ~ 1GΩ : ± (5% of reading + (0.2*500/Vs)% of full scale)
Impulse Winding Test		
Applied Voltage, Step, and Energy		0.5 ~ 6kV ,10V Step ,Max 0.21 Joules
Inductance Test Range		More than 10uH
Sampling Speed		10bit / 5ns (200MHz)
Sampling Range		11 Ranges
Pulse Number		Pulse Number: 1~32, Dummy Pulse Number: 0~9
Detection Mode		Area / Differential Area : Flutter/ Laplacian Detection
DC Resistance Measurement		
Test Signal		<DC 10V , <DC 200mA
Measurement Range		0.1mΩ ~ 500kΩ
Measurement Accuracy	100mΩ	± (0.5% of reading + 1% of full range)
	1Ω	± (0.5% of reading + 0.2% of full range)
	10Ω	± (0.5% of reading + 0.05% of full range)
	100Ω	± (0.5% of reading + 0.05 % of full range)
	1kΩ	± (0.5% of reading + 0.05 % of full range)
	10kΩ	± (0.5% of reading + 0.05 % of full range)
100kΩ	± (0.5% of reading + 0.05 % of full range)	
Flashover Detection		
Detection Current		Programmable setting AC : 20mA ; DC : 10mA
Contact Check Function		
Contact Check		OSC (open/short check)
		HFCC (High Frequency Contact Check)
		HSCC (High Speed Contact Check; winding DCR check)
Electrical Hazard Protection Function		
Ground Fault Interrupt		0.5mA ±0.25mA AC, ON/OFF
Key Lock		Yes (password control)
Interlock		YES
Indication, Alarm		GO : Short sound, Green LED; NG : Long sound, Red LED
Memory Storage		200 sets, max. 40 steps per set
Interface		
Standard : RS232, Handler ,USB , LAN interface		
General		
Operation Environment		Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ ≤ 40°C
Power Consumption		No Load: <150VA ; Rated Load: <1000VA
Power Requirements		90 ~ 264Vac, 47 ~ 63Hz
Dimension (W × H × D)		428 × 177 × 500mm / 16.850 x 6.969 x 19.685 inch
Weight		26kg / 57.32 lbs

Wound Component EST Scanner

MODEL 19035 19035-M 19035-S

Functions

- 5kVAC & 6kVDC Hipot test
- 1M Ω ~50G Ω /5kV IR test
- 10m Ω ~100k Ω DCR test
- 8 channel scanner

Key Features

- Support 16CH scan box (19035 only)
- High Speed Contact Check (HSCC)
- SUB-STEP function
- Open / Short Check (OSC)
- GFI human protection
- Flashover detection
- Key lock function
- RS232 Interface (standard*1)
- GPIB & HANDLER (optional)
- CE mark

WOUND COMPONENT EST SCANNER MODEL 19035 SERIES

Wound Component Testing Solution

The quality verification tests for wound components consist mainly of AC/DC Hipot tests and Insulation Resistance (IR) tests. The 19035 Wound Component EST Scanner Series perform safety tests for motor, transformer, and heater related wound products. Reliable quality control and efficient product control are obtained when implementing this scanner for quality verification by wound component manufacturers.

The 19035 Series supports 5kVac/6kVdc high voltage output to conform with withstand voltage test requirements for wound components, and has a maximum output current up to 30mA. The Insulation Resistance (IR) test measurement ranges from 1M Ω to 50G Ω , and voltage output can be up to 5kV; while the DCR test can measure the resistance parameter of wound components and test the circuit connection (contact check) before the withstand voltage test.

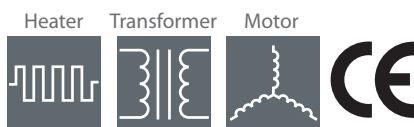
The 19035 Series also has powerful functions for Flashover detection and Open/Short Check (OSC), as well as programmable voltage and time parameters for various characteristics of DUTs for increased testing reliability and product quality.

Applications

The 19035 Series is a comprehensive safety tester designed for motor, transformer, and heat related wound component tests. Most wound components have multiple windings, such as 3-phase motors and dual winding transformers. With 8-channel scanning ability the 19035 can measure multiple test points in one test instead of switching test points manually. This reduces test time and labor cost immensely.

The built in OSC and DCR functions verify poor contact or short circuits that occur during test, and solves the contact problems with wound components improving test quality and prolonging test equipment lifespans.

- ◆ Motor, Fan : 19035-M
- ◆ Electric Heater Tube : 19035-M
- ◆ Transformer : 19035
- ◆ Switch, Wire : 19035
- ◆ Camera Micro Motor, Coil : 19035-S



SPECIFICATIONS

Model	19035	19035-M	19035-S
Mode	ACV / DCV / IR / DCR -8CH	ACV / DCV / IR / DCR -8CH	ACV / DCR -8CH
Channel Programming	H/L/X in 8CHs	H/X in CH 1,2,3,5,6,7 ; L/X in CH 4,8	H/L/X in 8CHs
Withstanding Voltage Test			
Output Voltage	AC:0.05 ~ 5KV, DC : 0.05 ~ 6kV		AC:0.05 ~ 5KV
Load Regulation	\leq (1% of setting + 0.1% of full scale)		
Voltage Resolution	2V		
Voltage Accuracy	\pm (1% of setting + 0.1% of full scale)		
Cutoff Current	AC : 30mA, DC : 10mA		
Current Resolution	AC : 1 μ A, DC : 0.1 μ A		
Current Accuracy	\pm (1% of reading + 0.5% of range)		
Output Frequency	50Hz / 60Hz		
Test / Ramp / Fall / Dwell Time	0.3 ~ 999 sec., continue / 0.1 ~ 999 sec., off / 0.1 ~ 999 sec., off / 0.1 ~ 999 sec., off		
Waveform	Sine wave		
Insulation Resistance Test			
Output Voltage	DC : 0.05 ~ 5kV		--
Voltage Resolution	2V		--
Voltage Accuracy	1% of setting + 0.1% of full range		--
IR Range	0.1M Ω ~ 50G Ω		--
Resistance Resolution	0.1M Ω		--
Resistance Accuracy	\geq 1000V	1M Ω ~ 1G Ω : \pm (3% of reading + 0.1% of full range) 1G Ω ~ 10G Ω : \pm (7% of reading + 2% of full range) 10G Ω ~ 50G Ω : \pm (10% of reading + 1% of full range)	--
	500V~1000V	0.1M Ω ~ 1G Ω : \pm (3% of reading + 0.1% of full range) 1G Ω ~ 10G Ω : \pm (7% of reading + 2% of full range) 10G Ω ~ 50G Ω : \pm (10% of reading + 1% of full range)	--
	< 500V	0.1M Ω ~ 1G Ω : \pm 3% of reading + (0.2*500/Vs)% of full scale	--
	Scanner Unit	8 ports, \pm phase (4W DCR only 4 ports)	
DC Resistance Measurement			
Test Signal	<DC 10V, < DC 140mA		
Measurement mode	2 terminals (2W) / 4 terminals(4W) measurement selectable ; Range : 50m Ω ~500k Ω		
Measurement Accuracy (2W/ 4W)	1 Ω (4W only)	-- / \pm (0.5% of reading + 0.5% of range)	
	10 Ω	\pm (2% of reading + 0.5% of range) / \pm (0.5% of reading + 0.05% of range)	
	100 Ω	\pm (2% of reading + 0.5% of range) / \pm (0.5% of reading + 0.05% of range)	
	1k Ω	\pm (2% of reading + 0.5% of range) / \pm (0.5% of reading + 0.05% of range)	
	10k Ω	\pm (2% of reading + 0.5% of range) / \pm (0.5% of reading + 0.05% of range)	
	100k Ω	\pm (2% of reading + 0.5% of range) / \pm (0.5% of reading + 0.05% of range)	
Flashover Detection			
Setting Mode	Programmable setting		
Detection Current	AC : 1mA ~ 15mA, DC : 1mA ~ 10mA		
Secure Protection Function			
Fast Output Cut-off	0.4ms after NG happen		
Ground Fault Interrupt	0.5mA \pm 0.25mA AC, ON/OFF		
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	50 instrument setups with up to 20 test steps		
Interface	RS-232*1 (Standard), RS-232*1 or GPIB & Handler & Temperature interface (Optional)		
General			
Operation Environment	Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ \leq 40°C		
Power Consumption	500VA		
Power Requirements	90~132Vac or 180~264Vac, 47~63Hz		
Dimension (H x W x D)	133x430x470mm/5.24x16.93x18.50 inch		
Weight	Approx.20 kg/44.09 lbs		

All specifications are subject to change without notice. Please visit our website for the most up to date specifications.

MODEL 19020 SERIES

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
- 1M Ω ~50G Ω insulation resistance test
- Standard RS232 / Handler interface
- Optional GPIB interface
- Large LCD panel
- Key lock function
- CE Mark

MULTI-CHANNEL HIPOT TESTER MODEL 19020 SERIES

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 25 years of experience in developing the instruments for test and measurement, 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 maximum simultaneously.

There is no need to purchase various Hipot testers to save the production line space. 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.

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, but highly efficient test platform can also be created.

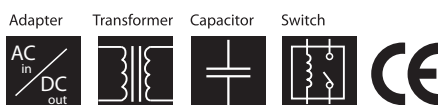
World's First Sync Hipot Test (Patent Registered)

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.

Applications

19020 can be applied to various electrical products for time consuming tests such as quality assurance sampling test and production line test.

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



SPECIFICATIONS

Model	19020	19020-4	19021	19022	19022-4
Mode	AC/DC/IR	AC/DC/IR	AC	DC/IR	DC/IR
Channel	10	4	10	10	4
Withstanding Voltage Test					
Output Voltage	AC:0.05kV-5kV ; DC:0.05kV-6kV		AC:0.05kV-6kV	DC:0.05kV-8kV	
Load Regulation			2% of setting + 0.1% of full scale		
Voltage Resolution			2V		
Voltage Accuracy			2% of setting + 0.1% of full scale		
Cutoff Current			AC : 0.01 ~ 10mA, DC : 0.001 ~ 5mA		
Current Resolution			AC : 1 μ A, DC : 0.1 μ A		
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(19020&19022 series only)					
Output Voltage			DC : 0.05 ~ 1kV		
Voltage Resolution			2V		
Voltage Accuracy			2% of setting + 0.1% of full range		
IR Range			1M Ω ~ 50G Ω		
Resistance Accuracy	$\geq 500V$		1M Ω ~ 1G Ω : $\pm 3\%$ of reading + 0.1% of full range		
	$\leq 500V$		1G Ω ~ 10G Ω : $\pm 7\%$ of reading + 0.2% of full range 10G Ω ~ 50G Ω : $\pm 10\%$ of reading + 1% of full range		
Test Time			1M Ω ~ 1G Ω : $\pm 3\%$ 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 $^{\circ}$ C (64 to 82 $^{\circ}$ F), 70% RH. Maximum relative humidity 80% for temperature up to 31 $^{\circ}$ C (88 $^{\circ}$ F) Decreasing linearly to 50% relative humidity at 40 $^{\circ}$ C(104 $^{\circ}$ 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. Please visit our website for the most up to date specifications.

Hipot Analyzer

MODEL 19055

Functions:

- Hi-Pot
 - AC 5kV/100mA
 - DC 6kV/20mA
- Insulation
 - 5kVmax
 - 1M Ω ~50G Ω

Key Features:

- 500VA output rating
- Floating output complies with EN50191
- Corona Discharge Detection (CDD, option)
- Flashover Detection
- Discharge Level Analysis (DLA)
- Open Short Check (OSC)
- High Frequency Contact Check (HFCC)
- Ground Fault Interrupt
- Standard RS232 interface
- Option GPIB & HANDLER interface
- Key lock when fail
- Programmable voltage & test limit
- CE Mark



HIPOT ANALYZER MODEL 19055

19055 Series Hipot Analyzers are designed for hipot tests and analysis. The tests of AC/DC/IR can be programmed in 5kV/100mA with 500VA output rating which complies with the EN50191 requirements. (Please refer to the application notes for more detail information.)

The 19055-C has not only the AC/DC/IR tests but also a new measurement technology - Corona Discharge Detection (CDD) that can detect the following via the Discharge Level Analysis (DLA) test mode.

- Corona discharge Start Voltage (CSV)
- Flashover Start Voltage (FSV)
- BreakDown Voltage (BDV)

As to the Contact Check during Hipot test, 19055 Series is equipped with a new function of High Frequency Contact Check (HFCC) besides the Open Short Check (OSC). By conducting the Contact Check during Hipot test, it can increase the test reliability and efficiency significantly.

For convenience use, 19055 has large LCD screen for operation and judgment. In addition, the GFI human protection circuit and Floating safety output prevent the operators from electrical hazard.

Applications

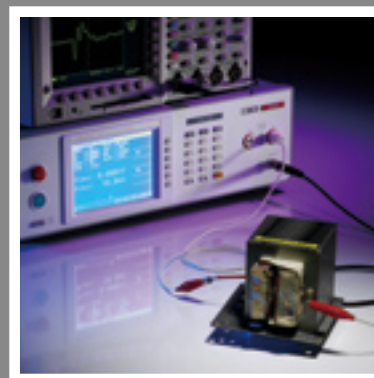
Motor: The 19055 Series Hipot Analyzers with 500VA output rating can be used to test and analyze the withstand voltage of high power and leakage current for the products like motor stators and rotors with high parasitic capacitance. Corona detection can be used for turn-to-turn or turn-to-ground test to avoid winding insulation failure from corona discharge.

Transformer: When using a power transformer under the normal voltage, a primary side corona discharge could cause the adjacent components to be damaged if occurred. Thus, the function of Corona Discharge Detection (CDD) of 19055-C can be used to detect if there is any corona discharge occurred to improve the product quality.

High Voltage Capacitor, Photocoupler & Insulation Material:

If any gaps, voids or impurities appeared when doing molding in the manufacturing process, the insulation capability may be affected. The Corona Discharge Detection (CDD) equipped by 19055-C is able to detect if there is any corona discharge occurred to enhance the product quality.

With these functions the R&D engineers are able to analyze the products for the components with poor insulation and solve the problem.



SPECIFICATIONS

Model	19055	
Mode	ACV / DCV / IR	
Withstanding Voltage Test		
Output Voltage	AC : 0.05 ~ 5KV, DC : 0.05 ~ 6KV	
Load Regulation	1% of setting + 0.5% full range	
Voltage Accuracy	1% of setting + 0.5% full range	
Voltage Resolution	2V	
Cutoff Current	AC:100mA;DC:20mA	
Current Accuracy	1% of setting + 0.5% full range	
Current Resolution	AC : 1 μ A, DC : 0.1 μ A	
Output Frequency	50Hz / 60Hz	
Test/Ramp/Fall/Dwell Time	0.3 ~ 999 sec., continue / 0.1 ~ 999 sec., off / 0.1 ~ 999 sec., off / 0.1 ~ 999 sec., off	
Waveform	Sine wave	
Insulation Resistance Test		
Output Voltage	DC : 0.05 ~ 5kV	
Voltage Resolution	2V	
Voltage Accuracy	1% of setting + 0.5% full range	
IR Range	1M Ω ~ 50G Ω	
Resistance Resolution	0.1M Ω	
Resistance Accuracy	>1kV	1M Ω ~ 1G Ω : \pm 3% of reading + 0.1% of full range, 1G Ω ~ 10G Ω : \pm 7% of reading + 2% of full range, 10G Ω ~ 50G Ω : \pm 10% of reading + 1% of full range,
	\cong 500V	0.1M Ω ~ 1G Ω : \pm 3% of reading + 0.1% of full range, 1G Ω ~ 10G Ω : \pm 7% of reading + 2% of full range,
	\cong 1kV	10G Ω ~ 50G Ω : \pm 10% of reading + 1% of full range,
	<500V	0.1M Ω ~ 1G Ω : \pm 3% of reading + (0.2*500/Vs)% full range
Flashover Detection		
setting Mode	Programmable setting	
Detection Current	AC: 20mA;DC: 10mA	
Contact Check Function		
HFCC	High frequency contact check	
OSC (open/short check)	600Hz, 0.1s	
Electrical Hazard Protection Function		
Floating output design	Leakage current <3 mA	
Fast Output Cut-off	0.4ms after NG happen	
Ground Fault Interrupt	0.5mA \pm 0.25mA AC, ON/OFF	
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	100 sets, max. 50 steps per set	
Interface		
General	RS232, Handler interface (Standard), GPIB interface (Optional)	
General		
Operation Environment	Temperature: 0°C ~ 45°C, Humidity: 15% to 95% R.H@ \leq 40°C	
Power Consumption	500VA	
Power Requirements	90~132Vac or 198~264Vac, 47~66Hz	
Weight	Approx. 20kg	

All specifications are subject to change without notice. Please visit our website for the most up to date specifications.

Hipot Analyzer

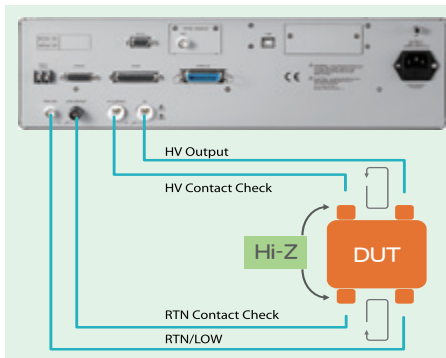
MODEL 19056 19057 Series

Key Features :

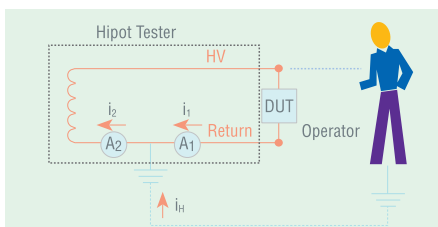
- 10kV AC & 20kV DC withstand voltage test
- 0.1M Ω ~50G Ω insulation impedance test
- BDV (BreakDown Voltage test)
- HVCC (High Voltage Contact Check)
- HFCC (High Frequency Contact Check)
- OSC (Open Short Check)
- GFI (Ground Fault Interrupt)
human protection circuit
- Fast charge/discharge function
- Programmable output & test limit
- Standard RS232 interface
- Optional GPIB&HANDLER interface
- Key lock function
- CE Mark

HIPOT ANALYZER MODEL 19056/19057 SERIES

19056/19057 Hipot Analyzer is an equipment specially designed for testing and analyzing ultra-high withstand voltage. The series of models include 10kVac/12kVdc/20kVdc with maximum AC20mA/DC10mA output can perform AC/DC withstand voltage and insulation resistance tests with contact check during production line test. In addition to the patented OSC (Open Short Check), High Voltage Contact Check is added to test the components with high insulation capability when high voltage outputs to improve the testing reliability and efficiency.



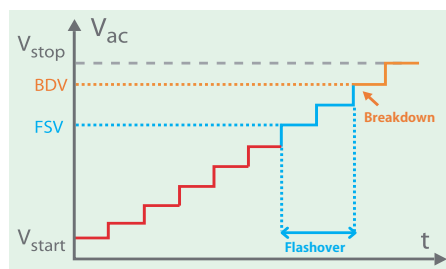
19056/19057 with GFI (Ground Fault Interrupt) is designed to protect operator's safety when abnormal ground current (A_2 - A_1) occurs.



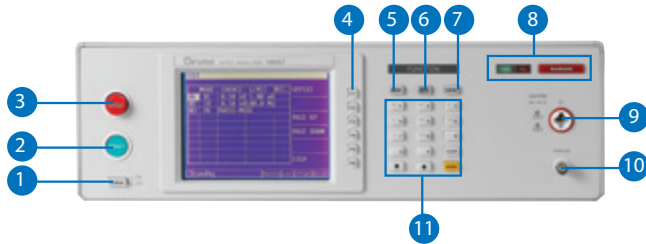
The Hipot Analyzer provides high withstand voltage test and analysis for optical couplers, HV relays, HV switches and PV modules, which have better insulation capability.

Charge and discharge are required for capacitive components when doing DC withstand voltage test. The Hipot Analyzers have fast charge function that can increase the production test efficiency.

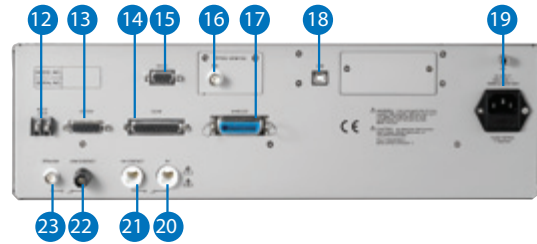
The Hipot Analyzer of entire series has Flashover (ARC) detection function. Through the start voltage, end voltage, no. of steps and time, it can perform discharge level analysis. Phase judgment is provided in DLA (Discharge Level Analysis) mode to set inspection for Flashover (ARC) and Breakdown test (high limit). When a defect appears in the test, the 19056/19057 will show the withstanding voltage to indicate the Flashover Start Voltage (FSV) or BreakDown Voltage (BDV) respectively. In addition, External Oscilloscopes can be mounted to check the waveform at the same time during analysis. The R&D engineers can perform product analysis and study utilizing the test results to improve the weakness of insulation components.



PANEL DESCRIPTION



- 1. Power Switch
- 2. Start Key
- 3. Stop Key
- 4. Function Key
- 5. Menu Key
- 6. Main Index Key
- 7. Local Key
- 8. LED Display
- 9. HV Output
- 10. RTN/LOW
- 11. Entry Keys



- 12. Interlock
- 13. OPTION
- 14. SCAN
- 15. RS232 Interface
- 16. ARC Signal Output
- 17. HANDLER Interface
- 18. USB Interface
- 19. Power Inlet
- 20. HV
- 21. HV CONTACT
- 22. LOW/CONTACT
- 23. RTN/LOW

SPECIFICATIONS

Model	19056	19057	19057-20
Mode	ACV	DCV / IR	DCV / IR
Withstanding Voltage Test			
Output Voltage	AC: 0.1~10kV	DC: 0.1~12kV	DC : 0.1 ~ 20kV
Load Regulation	± (1% of output + 10V), Rated load		
Voltage Accuracy	1% of reading + 0.1% of full scale		1.5% of reading + 0.1% of full scale
Voltage Regulation	± (1% of output + 10V), Rated load		
Cutoff Current	0.001~20mA	0.0001~10mA	0.0001~5 mA
Current Accuracy	0.100mA~2.999mA : ± (1% of reading + 0.3% of full range) 3.00mA~20.00mA : ± (1.5% of reading + 0.3% of full range)	± (1% of reading + 0.5% of full range)	
Current Resolution	AC : 1 μA	DC : 0.1 μA	
Output Frequency	50Hz / 60Hz	-	-
Test/Ramp/Fall/Dwell Time	0.3 ~ 999 sec., continue / 0.1 ~ 999 sec., off / 0.1 ~ 999 sec., off / 0.1 ~ 999 sec., off		
Waveform	Sine wave	-	-
Insulation Resistance Test			
Output Voltage	-	DC : 0.1 ~ 5kV	
Voltage Resolution	-	2V	
Voltage Accuracy	-	1% of setting + 0.5% of full scale	1.5% of setting + 0.5% of full scale
IR Range	-	0.1MΩ ~ 50GΩ	
Resistance Resolution	-	0.1MΩ	
Resistance Accuracy	≥ 0.5kV	-	1MΩ ~ 1GΩ : ± 3% of reading + 0.5% of full range 1GΩ ~ 10GΩ : ± 5% of reading + 1% of full range 10GΩ ~ 50GΩ : ± 10% of reading + 1% of full range
	<0.5kV	-	1MΩ ~ 1GΩ : ± 5% of reading + (0.5*500/Vs)% of full scale
Flashover Detection			
Setting Mode	Programmable setting		
Detection Current	AC : 20mA	DC : 10mA	DC : 10mA
Contact Check Function			
Contact Check	OSC (open/short check) HVCC(High Voltage contact check) HFCC (High Frequency Contact Check)	HVCC(High Voltage contact check) HFCC (High Frequency Contact Check)	HVCC(High Voltage contact check) HFCC (High Frequency Contact Check)
Electrical Hazard Protection Function			
Ground Fault Interrupt	0.5mA ± 0.25mA AC, ON/OFF	-	-
Key Lock	Yes (password control)		
Interlock	YES		
GO/NG Judgment Window			
Indication, Alarm	GO : Short sound, Green LED; NG : Long sound, Red LED		
Memory Storage	100 sets ,max. 50 steps per set		
Interface	Standard-RS232, Handler interface ,USB , SCAN Optional - GPIB interface		
General			
Operation Environment	Temperature: 0°C ~ 45°C ; Humidity: 15% to 95% R.H@ ≤ 40°C		
Power Consumption	600VA		
Power Requirements	100~240Vac, 47~66Hz		
Dimension (HxWxD)	130x430x500 mm/5.12x16.93x19.69 inch		
Weight	28kg / 61.7 lbs		

All specifications are subject to change without notice

MODEL 19070 SERIES 19050 SERIES

Key Features

- AC/DC/IR 3 in 1 hipot tester
- AC 5kV and DC 6kV output
- 1kV insulation resistance test
- Insulation resistance measurement from $1\text{M}\Omega$ to $50\text{G}\Omega$
- Ground continuity check (GC)
- Standard RS-232 interface
- Open short check(OSC) function
- GFI shutdown of the instrument when current imbalance $> 0.5\text{mA}$
- Flashover (ARC) detection
- Quick discharge of DUT in IR and DC test
- Pause mode
- UL and TUV approved (*see spec)
- CE mark
- Programmable ramp/fall and test time
- Programmable high/low limit
- Save/Recall program test function
- Remote control and interface support

AC/DC/IR HIPOT TESTER MODEL 19070 & 19050 SERIES

Complete Dielectric Testing Solution

The 19050 series electrical safety testers are advanced digital hipot testers with load and line regulation to ensure measurement integrity. Multi-step capability allows users to perform multiple tests in sequence, such as AC hipot followed by IR.

The Hipot Tester 19050 series provides 3 models to choose from. The 19052 includes AC/DC/IR Hipot testing and insulation resistance (IR) measurements. The 19053 provides 8 scan channels for IR measurement, and the 19054 provides 4 scan channels for IR measurement in a single compact unit.

The Hipot Tester 19070 series provides 2 models to choose from. The 19071 is for AC Hipot testing. The 19073 combines both AC and DC Hipot with insulation resistance (IR) measurements into a single compact unit.

Open Short Check (OSC)

The OSC function is used to check whether the connection is an open circuit between the instrument and the DUT or if there is a breakdown inside the DUT before testing for electrical safety.

Flashover (ARC) Detection

The 19070 and 19050 series are sensitive enough to monitor for current spikes even if they do not exceed the maximum trip current level.

Ground Continuity Check (GC)

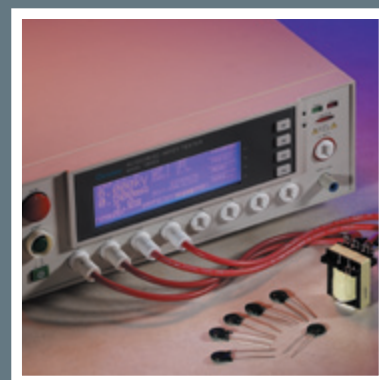
All of the 19050 series testers have a ground continuity check feature to determine if the resistance between the ground blade of the power cord and any exposed metal on the product is less than 1Ω .

Ground Fault Interrupt (GFI)

GFI is required by the National Electrical Code in wet locations. Such devices automatically interrupt power when a ground current $> 0.5\text{mA}$ exists for more than a few milli-seconds to protect users.

Quick Discharge

In DC hipot and IR tests, the device under test is discharged back through the HV transformer. This technique results in a rapid and safe discharge.



SPECIFICATIONS

Model	19071	19073	19052	19053	19054
Mode	ACV	ACV / DCV / IR	ACV / DCV / IR	ACV / DCV / IR / SCAN	
Scanner Unit	-	-	-	8 ports,±phase	4 ports,±phase
Withstanding Voltage Test					
Output Voltage	AC : 0.05 ~ 5kV, DC : 0.05 ~ 6kV				
Load Regulation	≦ (1%+5V)				
Voltage Resolution	2V				
Voltage Accuracy	1% of setting + 5 count				
Cutoff Current	AC : 0.1~20mA, DC : 0.01 ~ 5mA		AC : 0.1 ~ 30mA, DC : 0.01 ~ 10mA		
Current Resolution	AC : 1μA, DC : 0.1μA				
Current Accuracy	±(1.5% of reading + 5 counts)		±(1% of reading + 5 counts)		
Output Frequency	50Hz / 60Hz				
Test Time	0.3 ~ 999 sec., continue				
Ramp Time	0.1 ~ 999 sec., off				
Fall Time	0.1 ~ 999 sec., off				
Dwell Time	0.1 ~ 999 sec., off				
Waveform	Sine wave				
Insulation Resistance					
Output Voltage	-	DC : 0.05 ~ 1kV			
Voltage Resolution	-	2V			
Voltage Accuracy	-	±(1% of reading + 5 counts)			
IR Range	-	1MΩ~50GΩ	1MΩ~10GΩ		
Resistance Accuracy	≥ 500V	1.00MΩ ~ 25.00MΩ	-	±(4% of reading + 5 counts)	±(5% of reading + 2% of full scale)
		22.0 MΩ ~250.0MΩ	-		±(5% of reading + 5% of full scale)
		0.220GΩ ~1.000GΩ	-	±(7% of reading + 5 counts)	±(10% of reading + 2% of full scale)
		1.000GΩ ~2.500 GΩ	-		±(15% of reading + 5% of full scale)
	≤ 500V	2.20GΩ ~10.00GΩ	-	±(12% of reading + 5 counts)	±(15% of reading + 1% of full scale)
		10.00GΩ ~50.00GΩ	-		±(10% of reading + 2% of full scale)
		0.10 MΩ ~25.00MΩ	-	±(7% of reading + 5 counts)	±(10% of reading + 5% of full scale)
		22.0MΩ ~250.0MΩ	-		±(10% of reading + 5% of full scale)
0.220 GΩ ~1.000GΩ	-				
Flashover (ARC) Detection					
Setting Mode	Programmable setting				
Detection Current	AC : 1mA ~ 20mA, DC : 1mA ~ 5mA		AC : 1mA ~ 15mA, DC : 1mA ~ 10mA		
Secure Protection Function					
Fast Output Cut-off	0.4ms after NG happen				
Ground Fault Interrupt	0.5mA ±0.25mA AC, ON/OFF				
Panel Operation Lock	Present password				
Continuity Check	1~5Ω ± 0.2Ω, ON/OFF		1Ω ± 0.2Ω, ON/OFF		
GO/NG Judgment Window					
Indication, Alarm	GO : Short sound, Green LED ; NG : Long sound, Red LED				
Data Hold	Least tests data memories				
Memory Storage	10 steps or 60 groups for total 60 memory		99 steps or 99 groups for total 500 memory		
Remote & Interface					
Remote control	Input : Start, Stop, Interlock (at 11 pin terminal block only) ; Output : Under test, Pass, Fail				
Communication Interface	RS485 (Option)		RS232 (Standard), GPIB (Option)		
General					
Operation Environment	Temperature : 0°C~40°C ; Humidity : 15% to 95% R.H@≤40°C				
Power Requirements	100V/120V/220V/240V (AC ±10%), 50/60Hz				
Power Consumption	300W		500W		
Dimension (W x H x D)	270 x 105 x 350 mm		320 x 105 x 400 mm		
Weight	Approx.12 KG		Approx.15 kg		
Certification	UL, TUV, CE		UL, TUV, CE	CE	UL, TUV, CE

*All specifications are subject to change without notice.

По вопросам продаж и поддержки обращайтесь:

Архангельск (8182)63-90-72	Калининград (4012)72-03-81	Новосибирск (383)227-86-73	Сочи (862)225-72-31
Астана +7(7172)727-132	Калуга (4842)92-23-67	Омск (3812) 21-46-40	Ставрополь (8652)20-65-13
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Владивосток (423)249-28-31	Курск (4712)77-13-04	Ростов-на-Дону (863)308-18-15	Тюмень (3452)66-21-18
Волгоград (844)278-03-48	Липецк (4742)52-20-81	Рязань (4912)46-61-64	Ульяновск (8422)24-23-59
Вологда (8172)26-41-59	Магнитогорск (3519)55-03-13	Самара (846)206-03-16	Уфа (347)229-48-12
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Екатеринбург (343)384-55-89	Мурманск (8152)59-64-93	Саратов (845)249-38-78	Челябинск (351)202-03-61
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