SAFETY SEAL

Precision Withstand Voltage Testing
Safety Without Compromise

Hipot Tester 7630/7631/7631HD

ACW 5000V | DCW 6000V | IR 12000MΩ

DC Hipot

AC Hipot

IR

Multi-channel

7630

7631

7631HD

Safety is the ultimate goal of every product.
With our Hipot Tester, you can ensure reliability and eliminate leakage risks.

AC Hipot

Since most products in actual applications operate on AC power, the AC withstand voltage test is more widely accepted by safety certification agencies.
During AC testing, both polarities of the product can be verified simultaneously.
When AC voltage is applied, a reactive current is generated in the insulation layer — this reactive current is typically much larger than the actual leakage current, making it less accurate for true leakage measurement.
Because AC withstand testing does not fully charge stray capacitance or produce transient surge currents, there is no need to set a voltage ramp-up time or perform post-test discharge operations.

Advantages of AC Hipot Voltage Testing：

- No voltage ramp-up required
- No discharge operation after testing
- More readily accepted by safety certification bodies than DC testing

DC Hipot

In DC Hipot voltage testing, the applied voltage maintains a fixed polarity instead of alternating cyclically as in AC testing. Due to the capacitive characteristics of insulation, the initial charging current decreases over time, allowing for more accurate measurement of true leakage current.
However, the DC test voltage must be increased gradually from zero to prevent large charging currents from causing false trips or instrument shutdown. After testing, discharge must be performed to remove stored energy.

Advantages of DC Hipot Voltage Testing：

- Enables precise measurement of actual leakage current

IR

Insulation resistance is a key electrical parameter for evaluating the quality of insulating materials.
This test is typically expressed as a resistance value, and insulation resistance is usually required to be above the mega ohm (MΩ) range.

Insulation Requirement	Insulation Resistance Value
Basic+Supplementary	2MΩ or greater
Double+Reinforced	4MΩ or greater

In most safety standards, insulation resistance testing is classified as a Type Test, performed by applying approximately 500V DC for one minute, followed by resistance measurement.

Hipot Tester

7630/7631/7631HD

ACW 5kV/DCW 6kV
IR 12GΩ
DCR 10mΩ~100KΩ

MICROTEST
www.microtest.com.tw

• 7630

• 7631

• 7631HD

The MICROTEST Hipot Tester Series provides 4-in-1 testing functions - ACW, DCW, IR, DCR.
The MICROTEST Hipot Tester supports up to 5000V AC and 6000V DC withstand voltage testing, with insulation resistance up to 12GΩ.
Model 7630 features 1 HV terminal, 7631 provides 8 channels, and 7631HD offers 16 channels for multi-point testing. It supports PC connection software for remote programming and storage of test data. It can also be linked to a barcode scanner for barcode scanning, facilitating production traceability management.

Application

Components | Capacitors, Inductors, Filters, Transformers, Motors
Harnesses | NEV High-Voltage Harnesses, High-Voltage Connectors
PCB | Automotive Power Boards, Battery Flexible PCBs

Features

- 7630 (1 HV Terminal), 7631 (8 Channel), 7631HD (16 Channel)
- Support AC 5000V, DC 6000V, Insulation Resistance 12GΩ
- Arcing detection
- Built-in DCR Measurement (7631HD)
- Adjustable ramp time (0.1s-10s)
- True RMS measurement circuit
- USB Host stores setting files and can update firmware
- Support Remote control signal
- 7508/7516 (8/16 channels) expansion box can conjunction with 7631 for expanding channels to meet the vehicle wire or PCB testing

• 7630/ 7631

• 7631HD

CE

Standard Interfaces

RS-232 | USB Host
Remote | USB Device
EXT. I/O

Specification

Model	7630	7631	7631HD
Channel	1 HV Terminal	8	16
AC Hipot			
Output Voltage	10V-5000V		
Voltage Resolution	1V		
Voltage Accuracy	±(3% of setting +5V)		
Output Frequency	50/60Hz		
Rated Current (Max.)	30mA	30mA	30mA
Leakage Current	0.001-31mA		
Lower Leakage Current Resolution	0.001mA		
Lower Leakage Current Accuracy	±(3% of reading +10uA)		
Measuring Time	0.1-999s		
Measuring Time Resolution	0.1s		
Ramp Time	0.1-10s		
Arcing Detection	Detect gears from 0-20 (1 is the most sensitive)		
DC Hipot			
Output Voltage	10V-6000V		
Voltage Resolution	1V		
Voltage Accuracy	±(3% of setting +5V)		
Rated Current (Max.)	10mA		
Leakage Current	0.001-11mA		
Lower Leakage Current Resolution	0.001mA		
Lower Leakage Current Accuracy	±(3% of reading +10uA)		
Measuring Time	0.1-999s		
Measuring Time Resolution	0.1s		
Ramp Time	0.1-10s		
Arcing Detection	Detect gears from 0-10 (1 is the most sensitive)		
Insulation Resistance			
Output Voltage	10-1000Vdc		
Voltage Resolution	1V		
Voltage Accuracy	±(3% of setting+5V)		
Rated Current (Max.)	1mA		
IR Upper Threshold	1-12000MΩ		
IR Resolution	1MΩ		
IR Accuracy	100-500V, 1-1000MΩ (±5% of reading+1MΩ)/ 500-1000V, 2-12000MΩ (±5% of reading +10MΩ)		
Measuring Time	0.1-999s		
Measuring Time Resolution	0.1s		
Ramp Time	0.1-10s		
DC Resistance (7631HD)			
DC Resistance Range	10mΩ-100KΩ		
DC Resistance Resolution	0.01		
DC Resistance Accuracy	±3%		

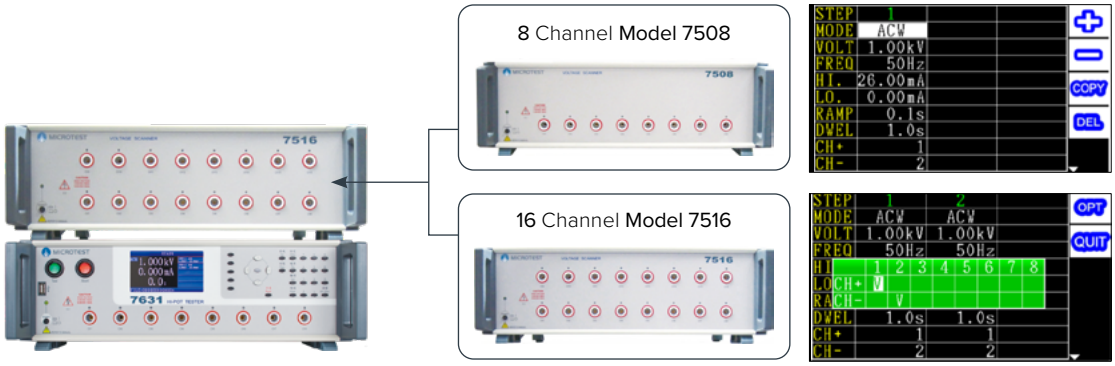
General

Remote Control	Test, Abort
Remote Output Signal	Pass, Fail, HV output, Testing
Safety Switch	When testing, you need to short-circuit the INTER LOCK on the rear of the instrument to output the test voltage
Built-in Storage	7630 (30 sets), 7631 (15 sets)
USB Host Storage	Storage setting files and update firmware
List Mode	Each group contains up to 16/ 32 steps (7630/ 7631)
Interface	RS-232, Remote, USB Host, USB Device, EXT.I/O
Power Supply	Voltage：90Vac-264Vac, Frequency：50/60Hz ±5%
Power Consumption	250VA
Display	480*272, 4.3" TFT LCD
Environment	Temperature：5℃-40℃, Humidity：20-80%RH
Dimension (W*H*D)	365×145×430mm (7630), 435×145×500mm (7631), 435×145×500mm(7631HD)
Weight	14Kg (7630), 15Kg (7631), 15kg(7631HD)

Functions

Multi-Channel Hi-Pot and Insulation Testing Solution

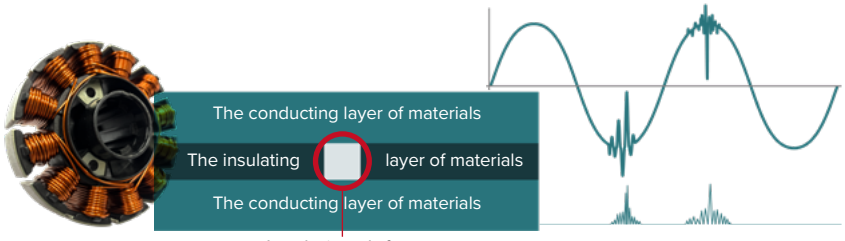
The 7631 Hipot Tester offers an option to integrate with the multi-channel expansion scan boxes 7508/7516 for multi-channel hi-pot and insulation testing. It supports stacking up to 4 units (72 test channels), allowing configuration of AC/DC/IR test items under various conditions for multi-point scanning tests.



Multi-channel expansion scan box

Arc Discharge Detection (Arc Discharge)

Arcs typically occur where high voltage passes through weak insulation. During dielectric withstand testing, electrical or insulation issues can lead to transient voltage or current peaks. For instance, in the case of motors, if insulation between laminations has defects like pinholes, it can result in arcing, potentially causing insulation breakdown due to heat generation.



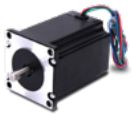
Insulation defect

Insulation materials inside or on the surface of motor stators/rotors may experience electrical discharge due to high voltage, deteriorating the motor's insulation performance. When defects are present in the insulation materials, these momentary discharges can lead to carbonization and the formation of conductive paths, posing safety concerns for the motor.

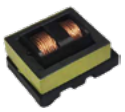
The MICROTEST 7630/7631 Hipot Tester features arc detection capability, allowing for setting arc detection levels (AC Arc Detection 1-20/DC Arc Detection 1-9) to conduct arc detection tests.

Guarding the insulation performance of components

Through high voltage withstand and insulation testing for components like motors, transformers, and capacitors, the MICROTEST 7630/7631 provides AC withstand voltage up to 5000V, DC withstand voltage up to 6000V, and insulation resistance up to 12000MΩ. It supports arc discharge detection to identify insulation defects that may cause discharge issues.



- Insulation deteriorates due to environmental temperature and humidity.
- Insufficient clearance in coil winding design affects insulation.
- Poor quality insulation materials.



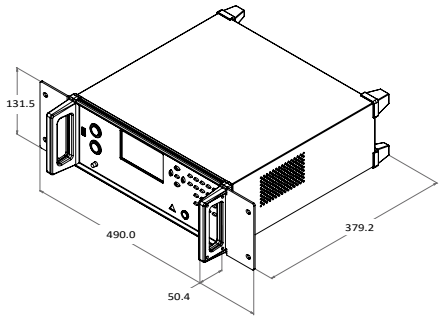
- Insulation tape inadequate performance
- Improper insulation sleeve installation
- Insulation layer defects in coils

- Manufacturing process defects causing cracks in the insulation layer.
- Poor internal component bonding damaging the insulation layer.
- Insufficient or uneven insulation layer thickness causing insulation degradation.

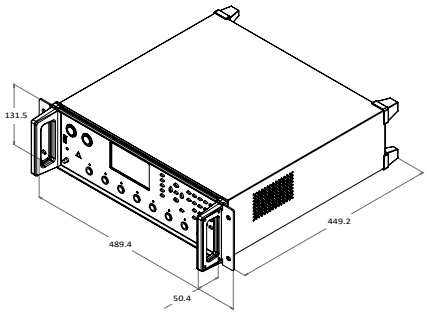
Automatic Chassis Dimension

• Dimension (mm)

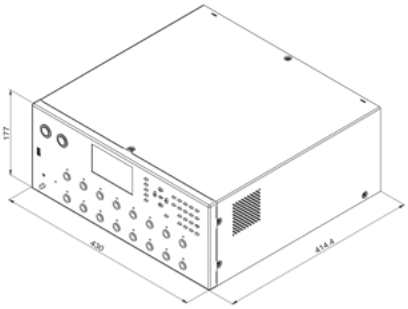
• 7630



• 7631

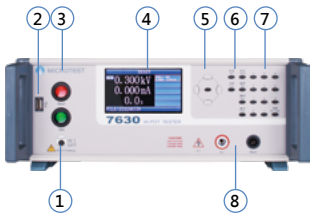


• 7631HD

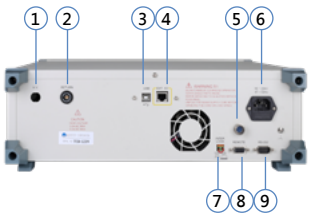


Appearance

• 7630

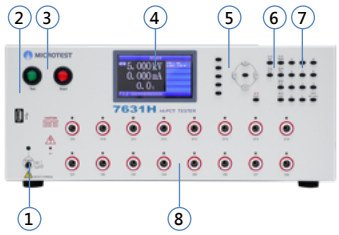


1. Power switch
2. USB
3. Test/Stop
4. LCD Screen
5. Direction
6. Function
7. Number key
8. High and low voltage output port

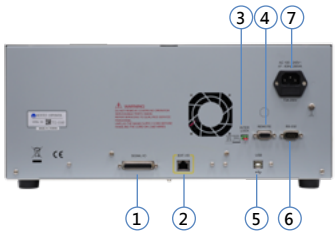


1. High voltage output port
2. low voltage output port
3. USB
4. EXT. I/O
5. High voltage test rod port
6. AC power socket
7. Inter Lock
8. Remote controller port
9. RS-232

• 7631HD



1. Power switch
2. USB
3. Test/Stop
4. LCD Screen
5. Direction
6. Function
7. Number key
8. High voltage output port



1. SIGNAL I/O
2. EXT. I/O
3. Inter Lock
4. Remote controller port
5. USB
6. RS-232
7. AC power socket

Ordering Information

Hipot Tester Series	Standard	Optional
• 7630 (1 HV Terminal) • 7631 (8 Channel) • 7631HD (16 Channel/ DCR)	7630/ 7631/ 7631HD • TL-HP0004 Alligator Clips-HV Test Cable-Red (56cm)(Default) • TL-HP0007 Probe-HV Test Cable (115cm) • TL-000002 Banana Plug-HV Test Cable-Red (60cm) Choose one of three • Power Cord	• F7620(M) Transformer HV Scan Box (Pneumatic) • F7620(P) Transformer HV Scan Box (Manual) • F760001 D-Sub foot switch (15 PIN) • TL-HP0005 Alligator Clips-HV Test Cable-Red (115cm) • TL-000003 RS-232 Cable (180cm) • 7508(B) Expansion box-8 Channel-Banana Connector-HV Test Cable • 7516(B) Expansion box-16 Channel-Banana Connector-HV Test Cable • 7508(C) Expansion box-8 Channel-Alligator Clips-HV Test Cable • 7516(C) Expansion box-16 Channel-Alligator Clips-HV Test Cable • PC Link Software

Fixture & Accessories

F7620(P)

Transformer HV Scan Box(Pneumatic)

7508(B)

Expansion Box(Banana Connector)

7516(B)

Expansion Box(Banana Connector)

Applicable Models	7631	7631	7631
Channel	20 Channel	8 Channel	16 Channel
Accessory Description	Customizable based on transformer pinout	Expandable to multiple test groups, with a maximum stacking capacity of 4 units. Suitable for automated production lines.	Expandable to multiple test groups, with a maximum stacking capacity of 4 units. Suitable for automated production lines.

7508(C)

Expansion Box(Alligator Clips)

7516(C)

Expansion Box(Alligator Clips)

Applicable Models	7631	7631
Channel	8 Channel	16 Channel
Accessory Description	Expandable to multiple test groups, with a maximum stacking capacity of 4 units. Suitable for automated production lines.	Expandable to multiple test groups, with a maximum stacking capacity of 4 units. Suitable for automated production lines.

F7620(M)

Transformer HV Scan Box(Manual)

Applicable Models	7631
Channel	20 Channel
Accessory Description	Customizable based on transformer pinout

	TL-000002 Banana Plug-HV Test Cable-Red	TL-HP0005 Alligator Clips-HV Test Cable-Red	TL-HP0007 Probe-HV Test Cable
			
Applicable Models	7630/ 7631	7630/ 7631	7630/ 7631
Accessory Description	HV 20kV | 60cm	HV 20kV | 115cm	115cm

	F760001 D-Sub Foot Switch	TL-HP0004 Alligator Clips-HV Test Cable-Red	TL-000003 RS-232 Cable
			
Applicable Models	7630/ 7631	7630/ 7631	7630/ 7631
Accessory Description	15 PIN	HV 20kV | 56cm	180cm