

Hipot - DCR

USES:

- Small Wire & Cable Testing
- Medical Component & Lead Testing
- Heater Production Testing
- Transformer Electrical Safety Testing
- Electric Motor Safety Testing
- Electronic Component Testing

FEATURES:

- Programmable Output Current to 30mA AC, 10mA DC
- Real and Total Current Measurement
- Programmable Output Voltage to 5kV AC 6kV DC
- Insulation Resistance Measurements from 1M Ω to 50G Ω
- DC Resistance Measurements from 50m Ω to 100k Ω
- Flex Test
- Ramp, Dwell, Test & Fall Times
- Programmable High & Low Limits
- Open/Short Circuit Check
- Arc Detection w/ Programmable Limit
- Storage of 50 Tests Setups with Multiple Steps per Measurement
- Front Panel Lockout
- RS232 Interface, Standard
- 8 Channel HV Scanner
- GFI

Hybrid 2000

AC/DC/IR/DCR Analyzer

Introduction

The Hybrid 2000 Analyzer is a complete dielectric testing solution with AC Hipot, DC Hipot, Insulation Resistance and DC Resistance testing capability. The Hybrid 2000 combines these four test modes with eight HV scan channels for fast multi-point testing. The Hybrid 2000 has Open/Short Circuit detection for establishing proper device connection and Load/Line regulation to ensure measurement integrity. The digital display and user friendly controls allow test parameters and limits to be set without the high voltage activated.

Description

AC Hipot Capability for AC dielectric withstand testing. The test voltage can be programmed in the range from 50VAC to 5kVAC with a resolution of 1V. Measure both total and real current with output current capability to 30mA.

DC Hipot Capability for making DC dielectric withstand measurements. The test voltage can be programmed in the range from 50VDC to 6kVDC with a resolution of 1V. The maximum total current is 10mA.

Insulation Resistance Measurements for testing the dielectric strength and breakdown of electrical devices, components and materials. The IR measurement range is from 1M Ω to 50G Ω with test voltages from 50 to 5000VDC.

DC Resistance (DCR) Measurements for 2-wire resistance testing. Perform multi-point DCR measurements from 50m Ω to 100k Ω . Set to continuous to monitor resistance while checking for intermittent connections.

Ground Fault Interrupt (GFI): Provides an extra level of safety for the operator and equipment. The instrument shuts down when the current imbalance exceeds 0.5mA. The Hybrid 2000 analyzer also has an interlock for use with palm switches, light curtains, hoods and other safety switches.

Quick DUT Discharge: In both the DC hipot and IR tests the device under test is discharged back through the HV transformer for a rapid and safe discharge.

Open/Short Circuit Mode: Use OS mode to detect connection of the device in order to prevent false readings. Open ensures the device under test is connected properly and Short ensures the device is not shorted prior to applying the high voltage.



Hybrid 2000

AC Hipot

AC Output Voltage:	Range: 50V to 5000V AC Resolution: 1Volts/step Frequency: 50/60 Hz selectable Waveform: Sinusoidal Regulation: $\pm(1\%$ of setting +5V)
Voltage Display:	Accuracy: $\pm(1\%$ of reading + 5V) Resolution: 1 Volt
AC Current Display:	Range: 0.001mA to 30mA AC Resolution: 1 μ A Accuracy: $\pm(1\%$ of reading + 5cnt) Total
High/Low Limit Test:	Range: 0.001mA to 30mA AC Low limit can be turned OFF

DC Hipot

DC Output Voltage:	Range: 50V to 6000V DC Resolution: 1Volts/step Regulation: $\pm(1\%$ of setting +5V)
Voltage Display:	Accuracy: $\pm(1\%$ of reading + 5V) Resolution: 1 Volt
DC Current Display:	Range: 0.0001mA to 10mA DC 3 Ranges: .0001mA - .2999mA, 0.3mA - 2.999mA, 3mA - 10mA Accuracy: $\pm(1\%$ of reading + 5cnt)
High/Low Limit Test:	0.1 μ A to 10mA DC Low limit can be turned OFF
Charging Current:	10mA max

Insulation Resistance

Insulation Resistance:	Range: 1M Ω - 50G Ω 1M - 1G: $\pm(3\%$ + 10 cts), $\geq 500V$ 1G - 10G: $\pm(7\%$ + 10 cts), $\geq 500V$ 10G - 50G: $\pm(10\%$ + 10 cts), $\geq 500V$
IR Output Voltage:	Range: 50V to 5000V DC Accuracy: $\pm(1.5\%$ of setting +5V)
High/Low Limit Test:	1M Ω - 50G Ω High limit can be turned OFF

DC Resistance (DCR)

DC Resistance:	Range: 50m Ω - 100k Ω .01-10 Ω : $\pm(2\%$ of rdg + 0.5% of range) 10.01-100 Ω : $\pm(2\%$ of rdg + 0.5% range) 100.0-1k Ω : $\pm(2\%$ of rdg + 0.5% range) 1.001-10k Ω : $\pm(2\%$ of rdg + 0.5% range) 10.01-100k Ω : $\pm(2\%$ of rdg + 0.5% range)
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Common Features

Open/Short Detection:	Voltage <100V, Frequency: 600Hz Open: 10-100%; Short: 100-500%
Arc Detection:	Arc Level: adjustable OFF or .1mA - 15mA AC & 10mA DC Arc Duration: > 10 μ s
Indication:	Pass/fail lights, audible sound
Time:	Ramp: 0.1 to 999s (± 20 ms), OFF Dwell: 0.1 to 999s (± 20 ms), OFF Test: 0.3 to 999s (± 20 ms), Continuous Fall: 0.1 to 999s (± 20 ms), OFF
Quick Discharge:	Discharge of voltage across DUT back through the HV transformer
Output Cutoff:	<0.4msec after limit exceeded
Ground Fault Interrupt:	Automatic instrument shutdown for current imbalance >0.5mA ± 0.25 mA AC
Standard Interfaces:	RS232: 9-pin Interlock
Test Setups:	50 Memory Locations, 20 Steps
Scan Channels:	8 HV Scan Channels
Scan Test Cables:	8 Custom Banana to Alligator Clip
Connectors:	8 HV OUTPUT (Custom Banana) Programmable as High, Low or Off RTN/LOW (Binding Post)
Front Panel Lockout:	Key press with or without memory recall
Miscellaneous:	Zero Offset
Dimensions:	(w x h x d): 17 x 6.8 x 17.7in (430x175x450mm)
Weight:	44 lbs (20kg) net, 50 lbs (22kg) ship
Environmental:	Meets MIL-T-28800E, Type 3, Class 5 Operating: 0°C to + 40°C Humidity: <70% Storage: - 10°C to + 60°C
Power:	•90 - 130V AC •50 or 60Hz •200 - 250V AC •500W max

Ordering Information

Hybrid 2000 AC/DC/IR/DCR Analyzer		Optional Accessories:	S11	Gun Probe with remote start
Includes:		Calibration Data	S12	Load Box, resistive
150827	Instruction Manual	S02	S14	Load Box, custom resistors
700070	Power Cable	S03	G16	International Power Strip
S02	Test Leads	S04	G25	Corded Product Adapter (240V)
700100	Ground Continuity Lead	S05	G40	Scanner Lead Set (8), with Clips
	Lead Set: (8) HV Banana to Alligator	S06	850900	IEEE-488/Handler Interface
520068	5A 250V Power Line Fuse	S07		
520134	2.5A 250V Power Line Fuse	S08		
Calibration Certificate Traceable to NIST		S09		
		S10		

