

# V7X Series Hipot Testers



Electrical safety testing will  
never be the same.

With color touch LCD and high speed DSP technology, the compact and rugged V7X sets the standard for price/performance ratio. Made in the USA to meet tough UL, CSA, TUV and IEC Hipot requirements—the V7X provides unbeatable speed, accuracy, user safety and reliability.

Choose from six low cost models offering AC and DC Hipot to 5KV, leakage current measurement to 100 nano-amperes, Insulation Resistance to 450GΩ, Ground Bond to 30 amperes and built-in switching. Combine all that with USB, RS232 and Digital I/O interfaces, plus a two year warranty.

The V7X is simply unbeatable.



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# Vitrek V7X Series – No other Hipot can touch ‘em

## Vitrek V7X Series

For nearly 25 years, an obsessions has driven us to keep improving how hipot testers perform—speed, accuracy, user safety and reliability have been our driving force. Building a better hipot tester is in our DNA—it drove us to successfully engineer the first 4-in-1 safety tester back in 1990 and it has driven us to redefine performance in low cost hipot testers today.

## The Hipot Experience has been Redefined

Our goal for the V7X series has been to achieve the unheard of. To provide state-of-the-art performance in a powerful yet compact multi-function hipot tester—and do it at an entry level price. From our easy-to-use Touch user interface, to its ultra-reliability, high efficiency, fan free design—the V7X provides unrivaled performance. Have we met our goal? You be the judge—compare the V7X to our made in China competitors and see how well American engineering stands up. We build Vitrek Hipot Testers. What's on your production line?

## Test 8 DUTs at a Time with the V76

For multi-channel hipot testing—choose the V76 with 24 channels of built-in high voltage switching. With the versatile V76, you can test hipot or IR for any combination of up to eight test points and you can measure low resistance (from .001 ohm to 60K ohms) on up to eight conductors. All automatically with a single touch and all from a single compact tester. For requirements exceeding eight points, the V7X can control up to four Vitrek 964i 64 channel HV Switching Systems—providing up to 256 channels of Hipot test capability. Simple, fast, automatic multi-point hipot—make the switch to the Vitrek V7X. You will be glad you did.

## Features and Benefits

- 4.3" Color Touch Display—Easy To Use Intuitive User Interface
- 6 Functions to Choose From—AC/DC Hipot, IR, Ground Bond, Continuity and Built-in Switching
- Made in the USA—Designed and Built in San Diego CA
- Compact, Lightweight, Rugged, Fan

Free, Fast (100mS min test time) and Accurate

- 5KV AC/DC Hipot, 20mA max source current
- Ground Bond 1-30A RMS (42 A peak), 100μΩ Resolution
- 100 nano-Amp Leakage Current Resolution
- Low Cost of Ownership—Two Year Calibration Interval
- USB 2.0, Serial/RS232, Digital I/O Interfaces are Standard
- Continuously Variable Insulation Resistance 20-5000V, 450GΩ Max
- Multi Mode IR with Steady/Rising Pass Mode
- Test Memory Stores up to 999 Steps and 60 Test Sequences
- Internal Self Test Fully Exercises Output and Verifies Current Accuracy
- Pre-Programmed Daily Verification Test With Optional PVD Test Load
- 150μS Safety Shutdown
- Ramped Discharge Capability
- Selectable ARC Detection 1-30mA
- Meets UL, CSA, IEC Safety Tester Requirements
- CE Safety Mark Certified to EN61010
- Two Year Parts and Labor Warranty



# Vitrek V7X Series Performance Specifications

## AC Hipot

### Output Voltage

10 to 5000V RMS, 50/60 Hz (2500V max on V76)

Accuracy : 1% of setting +5V, No load to full load

Resolution : 1V at all levels

Max load current : 20mArms

### Leakage Current

Accuracy : 1% of reading +5uA

Resolution : 1uA

## DC Hipot

### Output Voltage

20 to 5000V (2750V max on V76)

Accuracy : 1% of setting+ 5V, No load to full load

Resolution : 1V at all levels

Max load current : 10mA

### Leakage Current

Accuracy : 1% of reading +1uA

Resolution : 0.1uA

## IR - Insulation Resistance

### Test Voltage

20 to 5000VDC (2750V max on V76)

Accuracy : 2.5% of setting +5V, No load to full load

Resolution : 1V at all levels

Max Charge Current: 5mA automatic

Max Capacitive Load: 2uF

### Resistance

Max IR: 450Gigohm (90MΩ per volt)

Min IR: 150KΩ

Accuracy : 2% (rdg <5% of max IR), 5% (< 15% of max IR), 10% (< 30% of max IR), 20% (above 30% of max IR)

Max Resolution : 0.1% of value

Min/Max Limits : Defined for each step, max may be set to none

## Test Functions

|                  | V70 | V71 | V73 | V74 | V76 | V79 |
|------------------|-----|-----|-----|-----|-----|-----|
| AC Hipot         | •   | •   | •   | •   | •   |     |
| DC Hipot         |     | •   | •   | •   | •   |     |
| IR               |     |     | •   | •   | •   |     |
| Ground Bond      |     |     |     | •   |     | •   |
| Low Resistance   | •   | •   | •   | •   | •   | •   |
| 16 Ch HV Scanner |     |     |     |     | •   |     |

## Test Completion

End on Time: Determination on final reading

End on Pass: Test ends with PASS for any reading within limits

End on Fail: Test ends with FAIL for any reading outside limits

End on Steady: Test ends with PASS for a steady/rising reading within limits

## Low Resistance

### Resistance

Range: 0ohm to 60Kohm

Accuracy : 1.5 % + 0.015Ω (<13Ω), 3% + 1ohm (<1KΩ), 5 % (< 13KΩ)

Resolution : Down to 0.001Ω

Min test time: 60 mS

### Test Method

2 terminal measurement, 10.5mA/ 4.15V max

### Resistance Offset

Test leads/fixture measurement offset may be universally applied

## Ground Bond

### Test Current

1 to 30Arms (42A peak), 50/60Hz

Accuracy : 2.5% + 10mA

Resolution : settable to 0.01A at all levels  
Compliance: > 4.5Vrms (6V pk) for all currents

### Method

4 terminal measurement

### Resistance

Max Resistance: Up to compliance V limit at defined test current (4.5ohms max)

Min/Max Limits : Defined for each step, min may be set to none

Accuracy : 2.5% + 3mΩ (<2A), 2mΩ (<6.5A), 1mΩ (otherwise)

Resolution : 0.1mΩ (>6.5A), 1mΩ (otherwise)

### Resistance Offset

Test leads/fixture measurement offset may be universally applied.

## Test Timing

### Ramp Time

For AC/DC Hipot: 0 to 99.9sec (0.1sec resolution, 0.05sec accuracy)

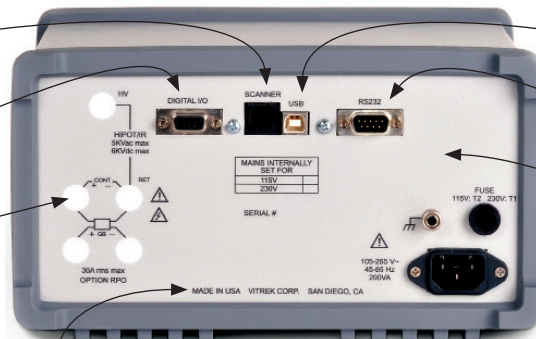
### Test/Dwell Time

0.1 to 9999sec or user end (0.1sec resolution, 0.15sec accuracy)

Controls up to 4 HV Scanners (N/A on V75 with built-in HV Switching)

Digital I/O with Safety Interlock

Optional Rear Panel Terminals or on V75  
16 terminals for Hipot/IR & Continuity



USB 2.0 High Speed Universal Serial Port

RS232 Serial Port with Selectable baud rate up to 115Kbaud

Ultra-Quiet, Ultra-Reliable, High Efficiency Fan Free Design

Rugged V7X with Heavy Duty Silicone Bumper

Advanced Design, Built-in Quality - Made in the USA

# Vitrek V7X Series Performance Specifications (continued)

## Ramp Down

May be set to 0sec or same as Ramp time, automatically skipped if no failure and next step is same AC/DC or IR test type.

## Shutdown

Breakdown : within 150us

HV Safety : within 1ms

User Stop or Interlock opened : within 2ms

Resistance/Current Limit : within 100ms

## Breakdown

For Hipot tests, automatically checks for sudden uncontrolled increases of load current throughout test, no min/max leakage required.

## Arc Detect

For Hipot tests, settable to none or adjustable level between 1 and 30mApk, 5MHz bandwidth.

## Pause Step

A timed pause of defined length between 0.1s and 999.9s.

## Hold Step

A user continued hold step with a two line message to be displayed to the user while the step is executing.

## Switch Step

Provides control of built-in 24 relay switching for hipot/IR and continuity (V76 only). For all other V7X models, provides control of up to 4 Vitrek 964 switch units, each switch step allows complete control over the states of all switches.

## Test Memory

Up to 999 total test steps may be defined in up to 60 different sequences.

## General Specifications

### DSP Measurement

40,000 samples per second for output control and parameter measurement

### Display

4.3" 480 x 272 Color touch LCD user interface

### Interfaces

USB 2.0, Scanner Control port (N/A on V75), RS232 and Contact Closure Digital I/O with Safety Interlock

### Factory Warranty

Two year parts and labor

### Standard Accessories

Alligator test leads for hipot and continuity units (TL-209), 4-wire alligator test leads for GB units (K-2R), operator's manual CD, QT Pro V utility software, evaluation version QT Pro test automation software and power cord

## Ordering Information

|          |   |
|----------|---|
| V70      | AC Hipot Tester                             |
| V71      | AC/DC Hipot Tester                          |
| V73      | AC/DC/IR Hipot Tester                       |
| V74      | AC/DC/IR/GB Hipot Tester                    |
| V76      | AC/DC/IR Hipot Tester with Built-in Scanner |
| V79      | Ground Bond Tester                          |
| V7X-230V | Factory Set for 230V Line                   |
| QT Pro 7 | QuickTest Software                          |
| TL-115-1 | 115V Receptacle Hipot Test Adaptor          |
| TL-115-2 | 115V Receptacle Hipot & GB Test Adaptor     |
| TL-209   | Additional HV/Continuity Test Lead set      |
| K-2R     | Additional Ground Bond Lead Set             |
| HVV-7    | High Voltage Warning Light                  |
| RSS-7    | Remote Start Switch                         |
| RSF-7    | Remote Start Footswitch                     |
| TL-TP1   | High Voltage Test Pistol                    |
| HC-V7X   | Hard Carrying Case with Die Cut Foam        |

## Calibration

Two year accuracy specifications and recommended calibration interval, NIST Traceable certificate standard and ISO17025 Accredited with data available.

## Safety

CE mark certified to EN61010

## Power

115 or 230VAC  $\pm 10\%$  factory set, 50-60Hz, 200VA max

## Dimensions

5.25" (133mm) H x 9.5" (240mm) W x 11" (280mm) D

## Weight

12 lbs, 5.5kg net (V70-73 and V75), 16 lbs, 7.3kg net (V74 and V79)

## Country of Origin

Made in the USA

# VITREK

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