The new Vitrek 4700 Precision High Voltage Meter offers the highest level of measurement accuracy, yet with its color touch screen is surprisingly easy to use. Vitrek has harnessed DSP technology to provide outstanding AC & DC voltage accuracy, stability and resolution. Performance that rivals traditional HV reference dividers, yet unlike the delicate HV divider, the 4700 provides instant, direct, high voltage measurements in a highly portable, compact and rugged bench top enclosure.

The 4700’s large, high resolution, color touch screen simultaneously displays the AC/DC content of the voltage being measured and in data log mode, can plot readings from a few seconds to several days.

**HIGH VOLTAGE REFERENCE DIVIDER PERFORMANCE IN A COMPACT, RUGGED BENCH TOP PACKAGE**

- Precise HV Measurement up to 10kV RMS Direct, available 35kV, 70kV & 100kV HV-SmartProbes™
- Calibrates Hipot Testers, HV Power Supplies and Insulation Testers
- Basic Accuracy - 0.03% DC and 0.1% True RMS AC
- Color Touch Screen - Makes for Easy Measurement Selection and Display
- PC Connectivity with standard Ethernet, Serial, USB Printer Port and optional GPIB
- Chart Mode Stores 300 Readings to Document HV source drift, ramp time, overshoot and sag
- Dual inputs provide Differential or Phase to Phase Voltage Measurement
- High Speed DSP provides up to 60 filtered readings per second
- True RMS AC Measurement from 0.01Hz to 600Hz - Covering VLF to Aviation Frequencies
- AC Noise Rejection 78dB - For Rock Solid, 6 Digit DC Measurements
- Optional Lithium-ion Battery Pack goes up to 11 hours between charges
- mark Certified to EN61010
- Three Year Extended Warranty

**FEATURES**

VITREK 4700 PRECISION HIGH VOLTAGE METER

WORLD LEADERS IN HIGH VOLTAGE TEST & MEASUREMENT
The 4700 Chart Mode automatically provides a scaled graphic presentation of up to 300 readings to aid in verification of voltage ramp and dwell times, undershoot, overshoot and drift.

To insure the best possible measurement accuracy, the 4700 makes over 40,000 samples per second which are then filtered, sub-sampled, scaled and offset corrected to provide up to 60 enhanced readings per second - all with “error free” mathematic methodology. The True RMS AC readings are as true as they come, while the DC measurements offer rocket fast settling with rock solid stability. In addition to this, the 4700 provides VLF AC readings down to 0.01 Hz, as well as, Ripple, Peak to Peak, Crest Factor and Fundamental Frequency Measurement.

Automate your HV test requirement with the 4700’s built-in Ethernet port, high speed serial communication port or available GPIB. The 4700 is fully programmable - so you can select your measurement mode and bandwidth, then take readings as often as desired. The 4700 also comes standard with a USB printer port, to capture readings and get hardcopy printouts of HV chart plots - so you can document the sag or overshoot in a typical hipot test.

Measurement integrity is our bottom line – whether you are on a production line manufacturing high voltage medical imaging equipment, in a national laboratory conducting ground breaking research or in the cal lab certifying test equipment, it is essential to choose your tools carefully.

Vitrek’s 4700 precisely measures voltages directly up to 15KV peak, right out of the box - with no external probes. That’s high enough for 90% of the hipot testers and other HV sources out there, however, should you care to expand your high voltage measurement range - just add one or more of the available 35KV, 70KV and 100KV HV-SmartProbes™. The Vitrek HV-SmartProbes™ each store their own calibration data which is down loaded when they are plugged in to the 4700 - this results in high accuracy, calibrated readings and allows any Vitrek HV-SmartProbe™ to be used with any 4700 HV Meter.

The HV-SmartProbe’s™ proprietary, ultra low TC attenuator design eliminates voltage coefficient adders - while its reduced capacitive construction technology enhances AC performance. In addition to the direct input terminal the 4700 has two probe inputs - one probe to extend your measurement range or two probes for making high voltage differential measurements.

Superior Performance By Design

Measurement integrity is our bottom line – whether you are on a production line manufacturing high voltage medical imaging equipment, in a national laboratory conducting ground breaking research or in the cal lab certifying test equipment, it is essential to choose your tools carefully.
VITREK 4700 PRECISION HIGH VOLTAGE METER

- Powder Coated, Extruded Aluminum Case - forms Faraday Shield for Improved Noise Immunity
- Color Touch Screen - Simplifies Measurement Set-up
- Dual 5½ Digit Displays Show Simultaneous AC & DC Readings
- Waveform Frequency, Peak-to-Peak and Crest Factor also Displayed during measurement
- A Single HV-Smartprobe connects here for Measurements up to 100KV
- Trusted Leader in Precision High Voltage Measurement since 1990
- A Second HV-Smartprobe plugs in here for Differential High Voltage Measurement
- The Lo Common input Terminal can Handle Surges up to 3KV with No Damage
- Direct Input - Measures up to 10KV AC & DC, with No External Probes
- Power and Battery LED Status Indicators
- Tilt Feet for Optimum Viewing Angle
- 100% Silicone - Protective Front & Rear Bumpers
PERFORMANCE SPECIFICATIONS

4700 DIRECT INPUT MEASUREMENT
Maximum Input Voltage
10KV DC, 10KV AC RMS, 15KV peak (10MΩ input impedance)

DC Voltage Accuracy
0.03% of reading + 0.03V + ½ digit

AC Voltage Accuracy (True RMS, Band Selectable)
0.01 to 1Hz : 0.12% of reading + 0.1V + ½ digit
10 to 65Hz : 0.12% of reading + 0.1V + ½ digit
30 to 200Hz : 0.12% of reading + 0.1V + ½ digit
200 to 450Hz : 0.4% of reading + 0.1V + ½ digit

4700 HV-SMARTPROBE™ INPUT MEASUREMENT
Maximum Input Voltages
35KV Probes 35KVDC, 30KV AC RMS, 45KV peak (200MΩ input impedance)
70KV Probes 70KVDC, 50KV AC RMS, 75KV peak (400MΩ input impedance)
100 KV Probe 100KVDC, 70KV AC RMS, 105KV peak (600MΩ input impedance)

DC Voltage Accuracy
HVL-35: 0.025% of reading + 0.07V + ½ digit
HVP-35: 0.035% of reading + 0.07V + ½ digit
HVL-70: 0.03% of reading + 0.2V + ½ digit
HVP-70: 0.04% of reading + 0.2V + ½ digit
HVL-100: 0.05% of reading + 0.3V + ½ digit

AC Voltage Accuracy (True RMS, Band Selectable)
HVL/P-35 0.01 to 1Hz : 0.15% of reading + 0.2V + ½ digit
HVL-35 30 to 200Hz : 0.03% of reading + 0.2V + ½ digit
HVP-35 30 to 200Hz : 0.1% of reading + 0.2V + ½ digit
HVL/P-35 200 to 450Hz : 0.6% of reading + 0.2V + ½ digit
HVL/P-70 0.01 to 1Hz : 0.2% of reading + 0.4V + ½ digit
HVL-70 30 to 100Hz : 0.075% of reading + 0.4V + ½ digit
HVP-70 30 to 100Hz : 0.12% of reading + 0.4V + ½ digit
HVL/P-70 200 to 450Hz : 2.5% of reading + 0.4V + ½ digit
HVL-100 0.01 to 1Hz : 0.3% of reading + 0.6V + ½ digit
HVL-100 30 to 70Hz : 0.12% of reading + 0.6V + ½ digit
HVL-100 70 to 200Hz : 1% of reading + 0.6V + ½ digit

GENERAL SPECIFICATIONS

AC/DC Voltage Measurement Resolution
Displayed Resolution: Selectable 4, 5 or 6 digits

<table>
<thead>
<tr>
<th>Direct Input</th>
<th>0.01V to 1400Vpk</th>
<th>0.1V to 14KVpk</th>
<th>1V above 14KVpk</th>
</tr>
</thead>
<tbody>
<tr>
<td>35KV Probes</td>
<td>0.01 to 800Vpk</td>
<td>0.1V to 8KVpk</td>
<td>1V above 8KVpk</td>
</tr>
<tr>
<td>70KV Probes</td>
<td>0.01V to 1.6KVpk</td>
<td>0.1V to 16KVpk</td>
<td>1V above 16KVpk</td>
</tr>
<tr>
<td>100KV Probe</td>
<td>0.01V to 2.4KVpk</td>
<td>0.1V to 24KVpk</td>
<td>1V above 24KVpk</td>
</tr>
</tbody>
</table>

Measurement Functions
DC Voltage, True RMS AC Voltage, Ripple, Peak to Peak, Crest Factor & Frequency Measurement (4 digits 0.01 Hz to 600Hz)

Measurement Time
User selectable down to 16mS (60 readings per sec.)

Maximum Input to Common Terminal
3 KV Peak for 1 sec, no damage

Accuracy Specifications
Valid one year + 5C from Cal temperature

*measurement accuracy within ± 10Hz of calibration frequency

High Voltage Self Heating (DC & >20Hz)
The effect of self heating induced as a result of applied voltage, is not included in the accuracy specifications, takes up to several minutes to become fully apparent and a similar time to dissipate.

<table>
<thead>
<tr>
<th>Direct Input</th>
<th>&lt;1.5ppm of reading per KV2</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVL-35</td>
<td>&lt;0.4ppm of reading per KV2</td>
</tr>
<tr>
<td>HVP-35</td>
<td>&lt;0.14ppm of reading per KV2</td>
</tr>
<tr>
<td>HVL-70</td>
<td>&lt;0.25ppm of reading per KV2</td>
</tr>
<tr>
<td>HVL-100</td>
<td>&lt;0.07ppm of reading per KV2</td>
</tr>
</tbody>
</table>

Environmental/Physical
Operating Environment 0 to 50C, >85% RH (non-condensing)
Dimensions 218mm (8.5") wide x 130mm (5") high x 253mm (10") deep, nominally
Weight 2.4kg max (4kg shipping)

Power
AC Source 45 to 450Hz, 100 to 265Vrms at <15W (20VA) using supplied external power supply
DC Source 11 to 16Vdc at <1.2A, using a center positive 2.5mm DC power connector
BP-47 Battery Option Up to 11 hours continuous operation

Standard Accessories
The 4700 is shipped with a NIST traceable certificate of calibration with data, direct input test leads, chassis ground lead, and external power supply. The HVP series handheld probes ship with probe stand and detachable probe tip.
HC-47 Hard Carrying Case
Rugged transit case with die cut foam inserts, accommodates 4700 with accessories and up to 2 HVP Series probes.

Warranty
3 year extended parts and labor warranty with no charge registration and annual factory calibration. 1 year standard warranty.

ORDERING INFORMATION

<table>
<thead>
<tr>
<th>4700</th>
<th>Precision HV Meter</th>
</tr>
</thead>
<tbody>
<tr>
<td>HVL-100</td>
<td>100KV Lab Precision Smart Probe</td>
</tr>
<tr>
<td>HVL-70</td>
<td>70 KV Lab Precision Smart Probe</td>
</tr>
<tr>
<td>HVP-70</td>
<td>70 KV Bench Precision Smart Probe</td>
</tr>
<tr>
<td>HVL-35</td>
<td>35KV Lab Precision Smart Probe</td>
</tr>
<tr>
<td>HVP-35</td>
<td>35 KV Bench Precision Smart Probe</td>
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<tr>
<td>BP-47</td>
<td>Lithium Ion Battery Pack</td>
</tr>
<tr>
<td>HC-47</td>
<td>4700 Hard Carrying Case</td>
</tr>
<tr>
<td>GP-47</td>
<td>GPIB Interface</td>
</tr>
<tr>
<td>RPT-47</td>
<td>Rear Panel Terminals (only)</td>
</tr>
<tr>
<td>RM-47</td>
<td>19” X 5.25” Rack Mount</td>
</tr>
</tbody>
</table>

12169 Kirkham Rd  |  Poway CA 92064
Tel: 858.689.2755  |  Fax: 858.689.2760
Email: info@vitrek.com  |  www.vitrek.com

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