

# 4600B Series Precision High Voltage Meter



## The Ultimate Tool for Automated Accurate HV Measurement

### HV Standards Lab in a Box

When it comes to making precise high voltage measurements there is nothing faster or easier than the Vitrek 4600B Series. With unrivaled accuracy and direct reading capability, Vitrek sets the performance standard for precision HV measurement of DC and True RMS AC voltages.

For quick and accurate calibration of Hipot testers, HV power supplies, transformers and other high voltage sources, the 4600B Series can't be beat. For rock solid DC performance, the 4600B units use multi-slope integrating A to D converters to provide fast and stable readings - even in the presence of noise and ripple. The B Series meters use True RMS AC measurement to provide accurate results with sine wave or distorted waveforms. The dual Hi & Lo range selection, gives you optimum performance over a broad span of voltages.



The new modular 20kV, 40kV and 70kV probes Offer a 62% reduction in dielectric mass - to provide enhanced AC performance

### Test Automation with Opto-Isolated Serial Communication

Automate your HV measurement task using the high speed RS232 comm port or available USB. With the new fully programmable 4600B Series, you can set mode and range and take readings all automatically. Plus the B Series offers new features like maximum reading mode - which can accurately capture the peak integrated reading on a 1 second hipot test. Addition features include - minimum reading mode, display hold and extended filtering.

### 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. Take the Vitrek 4600B Series, for instance. These rugged, compact instruments are equally at home in the lab or in the field.

Underneath their attractive, high impact, injection molded enclosures, lie a steel Faraday cage - to guard against the introduction of uncertainties due to stray EMF's, which are often present in high voltage applications. The modular construction of the 4600B Series probe features a removable probe tip which

- Precise HV measurement up to 20kV, 40kV or 70kV
- Ideal for calibrating Hipot testers, HV power supplies, insulation testers, HV transformers and more
- Fully Automatic HV Measurement with Isolated Serial/USB Comm Port
- High accuracy DC and true RMS AC capability
- Max Reading Mode Accurately captures 1 second Hipot tests
- Optional Differential Input Measure phase to phase or +HV to -HV
- Modular probe tip accepts a variety of test lead terminations
- Multi-slope integration provides fast, precise, stable readings with outstanding noise rejection
- Large, bright, easy to read 19,999 count LED display
- Two HV measurement ranges to provide optimum performance over a broad range of voltages
- CE mark certified to EN61010
- Three year extended warranty



can be replaced with a variety of available HV leads to provide the ideal connection for your application. The high impedance attenuator design of the 4600B Series balances offsetting power and voltage coefficients to deliver lab grade performance in a benchtop package. The 4600B Series attenuator also features a patented non-inductive design to minimize field effects and provide enhanced AC performance. For systems applications the 4600B Series is available with rack mount adapter and rear panel inputs.

## Dual Probe Option

A standard 4600B measures a HV source to common (within 500V of ground). For HV phase to phase AC or differential DC measurement (i.e. +10KV to -10KV) order the DPD option. The Vitrek 4600B Series is not only built tough, it is built to last – and it is backed by our Extended Three Year Warranty. Designed and manufactured right here in the USA, the 4600B Series is supported by the best customer service team in the industry. Isn't it about time to put Vitrek's legendary reputation for quality and reliability to work for you?



Removable probe tip can be replaced with one of three standard test leads

## 4600B Series Performance Specifications

### DC Voltage Measurement

#### Range Table:

Model	Ranges
4620B	2kV, 20kV
4640B	2kV, 40kV
4670B	20kV, 70kV

**Resolution:** 100mV on 2kV, 1V on 20kV  
10V on 40kV and 70kV ranges

#### Accuracy (1 year 23C±3):

±0.04% of reading ±0.02% of range + VC  
**Voltage Coefficient:** ±0.07ppm/V on 2kV, 20kV and 40kV ranges, ±0.05ppm/V on 70kV range

**Temperature Coefficient:** ±0.005% of rdg per °C from 10 to 20°C and 26 to 40°C

#### Maximum DC Inputs - HV probe tip:

4620B = ±20kVDC  
4640B = ±40kVDC  
4670B = ±70kVDC  
Common: 500VDC (without DPD option)

### AC Voltage (True RMS)

#### Range Table:

Model	Ranges
4620B	2kV, 20kV
4640B	2kV, 40kV
4670B	20kV, 70kV

**Resolution:** 100mV on 2kV, 1V on 20kV  
10V on 40kV and 70kV ranges

#### Accuracy (1 year 23C±3):

2kV range 20 to 100Hz :  
±0.07% of rdg ±0.1% of range + VC  
100 to 400Hz :

±0.4% of rdg ±0.2% of range + VC  
20kV range 20 to 100Hz :

±0.2% of rdg ±0.1% of range + VC  
40kV range 50 to 60Hz:

±0.4% of rdg ±0.15% of range + VC  
70kV range 50 to 60Hz:

±0.4% of rdg ±0.15% of range + VC

**Voltage Coefficient:** ±0.12ppm/V on 2kV, 20kV and 40kV ranges, ±0.1ppm/V on 70kV range

**Temperature Coefficient:** ±0.01% of rdg per °C from 10 to 20°C and 26 to 40°C

#### Maximum AC Inputs - HV probe tip:

4620B = 28.3kV peak AC (20kVRMS sine)  
4640B = 50kV peak AC (35kVRMS sine)  
4670B = 70.8kV peak AC (50kVRMS sine)  
Common: 500V pk AC (without DPD option)

### General Specifications

**Display Resolution:** 4 ½ digits (19.999 count)

#### Input Impedance:

4620B = 200MΩ  
4640B = 200MΩ  
4670B = 400MΩ

**Reading Rate:** 300 milliseconds

**NMRR:** 50db at 50/60Hz

**CMRR:** 50db

**Operating Temperature:** 10 to 40°C

**Humidity:** 10% to 85% RH

**Safety:** CE mark certified to EN61010

**Power:** 115/230VAC ±10%. 50/60Hz, 10VA Maximum

**Dimensions:** 292mmW x 203mmD x 83mmH (11.5"W x 8"D x 3"H)

#### Probe Dimensions:

Model	Length		Creepage Distance
	Overall		
4620B 20kV Probe	406mm (16")	280mm (11")	
4640B 40kV Probe	457mm (18")	380mm (15")	
4670B 70kV Probe	508mm (20")	482mm (19")	

**Weight:** 2.5kg (5.5 lbs.) Net, 5kg (11 lbs.) Shipping

### Standard Accessories

High voltage probe with removable probe tip, HV probe stand, common input test lead, TL-46PK high voltage test lead variety kit, power cord, operating manual, NIST traceable – ANSI/NCSS Z540 certificate of calibration.

### Warranty

Up to 3 year extended warranty with no charge registration and annual factory calibration (calibration fee applies). One year parts and labor warranty, standard.

### Options

**BP-46** Battery Pack option. The internal 6V gel cell provides 6 hours of typical battery life and a 12 hour re-charge time from built-in charger.

**DPD** Dual Probe Inputs for Hi Voltage Differential Measurements

**RM-46** Rack Adapter 2U 3.5" x 19" rack panel with support tray

**RPT-46** Rear panel common and HV probe input terminals

**HC-461** Hard cover carrying case

**AO-1** Analog Output Option

### Ordering Information

**4620B** 20kV Precision HV Meter

**4640B** 40kV Precision HV Meter

**4670B** 70kV Precision HV Meter

**BP-46** Battery Pack Option

**DPD-20** Dual Probe Input for 4620B

**DPD-40** Dual Probe Input for 4640B

**DPD-70** Dual Probe Input for 4670B

**RM-46** Rack Mount Kit

**TL-46PK** Test Lead Accessory Kit

**RPT-46** Rear Panel Input Terminals

**HC-461** Hard Cover Carrying Case

**AO-1** Analog Output Option



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