

4600A Series Precision High Voltage Meter



The Ultimate Tool for Fast and 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 4600A Series. With unrivaled accuracy and direct reading capability, the 4600A Series sets the performance standard for precision high voltage measurement. For quick and accurate calibration of Hipot testers (dielectric strength testers) and other high voltage sources, the 4600A Series can't be beat. Whether you are making direct or alternating high voltage measurements, the 4600A Series is uniquely equipped for the job. For rock solid DC performance, the 4600A Series' multi-slope integrating analog to digital converter provides fast, stable readings



From the top down, the new modular 20kV, 40kV and 70kV probes Offer a 62% reduction in dielectric mass – to provide enhanced AC performance

even in the presence of noise and ripple. For accurate AC measurement with either sine wave or distorted waveforms all of the 4600A Series units feature true RMS technology. The 4600A Series is equipped with two voltage scales, so you can cover a broader span of voltages and select the ideal range for optimum performance.

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 4600A 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 4600A 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
- High accuracy DC and true RMS AC capability
- Compact, rugged, lightweight benchtop/portable enclosure
- 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 20,000 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



WORLD LEADERS IN HIGH VOLTAGE TECHNOLOGY SM

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 4600A Series balances offsetting power and voltage coefficients to deliver lab grade performance in a benchtop package. The 4600A Series attenuator also features a patented non-inductive design to minimize field effects and provide enhanced AC performance. For people on the go – the 4600A Series is available with a standard carrying handle and an optional battery pack.

For systems applications the 4600A Series is available with rack mount adaptor and rear panel inputs. The Vitrek 4600A 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 4600A Series is supported by the best customer service team in the northern hemisphere. Isn't it about time to put Vitrek's legendary reputation for quality and reliability to work for your team?



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

4600A Series Performance Specifications

DC Voltage Measurement

Range Table:

Model	Ranges
4600A	2kV, 20kV
4640A	2kV, 40kV
4670A	20kV, 70kV

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

Accuracy: $\pm 0.04\%$ of reading $\pm 0.02\%$ of range

Voltage Coefficient: $\pm 0.1\text{ppm/V}$ on 2kV, 20kV and 40kV ranges, $\pm 0.07\text{ppm/V}$ on 70kV range

Temperature Coefficient: $\pm 0.005\%$ of rdg per $^{\circ}\text{C}$ from 10 to 20°C and 26 to 40°C

Maximum Inputs: (HV probe tip)
 $\pm 20\text{kVDC}$ 4600A,
 $\pm 40\text{kVDC}$ 4640A,
 $\pm 70\text{kVDC}$ 4670A, (common terminal)
500VDC max

AC Voltage (True RMS)

Range Table:

Model	Range-s
4600A	2kV, 20kV
4640A	2kV, 40kV
4670A	20kV, 70kV

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

Accuracy:

2kV range 20 to 100Hz $\pm 0.07\%$ of reading
 $\pm 0.1\%$ of range
100 to 400Hz $\pm 0.4\%$ of reading
 $\pm 0.2\%$ of range

20kV range 20 to 100Hz $\pm 0.2\%$ of reading
 $\pm 0.1\%$ of range

40kV range 50 to 60Hz $\pm 0.4\%$ of reading
 $\pm 0.15\%$ of range

70kV range 50 to 60Hz $\pm 0.4\%$ of reading
 $\pm 0.15\%$ of range

Voltage Coefficient: $\pm 0.2\text{ppm/V}$ on 2kV, 20kV and 40kV ranges, $\pm 0.15\text{ppm/V}$ on 70kV range

Temperature Coefficient: $\pm 0.01\%$ of rdg per $^{\circ}\text{C}$ from 10 to 20°C and 26 to 40°C

Maximum Inputs:

(at HV probe tip) 20kV peak AC
(15kVRMS sine) 4600A, 40kV peak AC
(25kVRMS sine) 4640A, 50kV peak AC
(35kVRMS sine) 4670A, (at common terminal) 500V peak AC

General Specifications

Display Resolution: 4 $\frac{1}{2}$ digits (19.999 count)

Input Impedance: 200M Ω , 400M Ω , with 4670A

Reading Rate: 300 milliseconds

NMRR: 50db at 50 of 60Hz

CMRR: 50db

Operating Temperature: 10 to 40°C

Humidity: 85% RH

Safety: CE mark certified to EN61010

Power: 115/230VAC $\pm 10\%$. 50/60Hz, 10VA Maximum

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

Probe Dimensions:

Model	Length Overall	Creepage Distance
4600A 20kV Probe	406mm (16")	280mm (11")
4640A 40kV Probe	457mm (18")	380mm (15")
4670A 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, common input test lead, TL-46PK high voltage test lead variety kit, power cord, operating manual, NIST traceable – ANSI/NCSL Z540 certificate of calibration with data

Warranty

3 year extended warranty with no charge registration and annual factory calibration, one year 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.

RM-46 Rack Adaptor 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

Ordering Information

4600A 20kV Precision HV Meter

4640A 40kV Precision HV Meter

4670A 70kV Precision HV Meter

TL-46PK Test Lead Accessory Kit

BP-46 Battery Pack Option

RM-46 Rack Mount Kit

RPT-46 Rear Panel Input Terminals

HC-461 Hard Cover Carrying Case

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