



# ALL-TEST Pro, LLC

## Sales Bulletin 07082016 ATPOL II Testing Over 1000V

**Issue:** The NEW ATPOL II (1000V CAT III - 600V CATIV model) is rated for direct connection to motor or generator systems 1000V or less. In order to connect to systems of higher voltage, potential transformers and current transformers need to be used. Below you will find some different testing options.

**Option 1** is for a testing application where the ALL-SAFE PRO<sup>®</sup> connection box is not used. The customer either has existing potential transformers (PT- reduces line voltage to typical 120V) and existing current transformers (CT- they must have a 0-5Amp output that is proportional to the load) or they need to be purchased and installed by them prior to testing. The ATPOL II is connected to the output side of these devices and then the correct ratio is entered into the ESA software, so it displays the correct Volts (V), Amp (I), Watts (VA), etc. This connection is made via the standard ATPOL II voltage probes and for best results, use our 0.02-5A portable current transformers (option- 45003). If you use the standard 0.1-100A portable current transformers that are supplied with the ATPOL II you may see a performance reduction, if the motor's load is quite low, based on the actual load versus the current rating of the existing current transformers.

**Option 2** is for a testing application where the ALL-SAFE PRO<sup>®</sup> connection box is not installed. Optional 5KV or 15KV portable voltage probes are purchased from us so they can be directly connected to motor systems above 1000V. There will still need to be customer installed current transformers and you will use the same 0.02-5A portable CT's that are described in **Option 1**.

**Option 3** is for a testing application where the ALL-SAFE PRO<sup>®</sup> connection box is installed. The ALL-SAFE PRO<sup>®</sup> connection box can be provided with 100A or 1000A current transformers with an insulation class rating of 5000V. These will be installed directly onto the phase connections. Therefore, the customer will only need to supply PT's for this application.

**Option 4** is for a testing application where the ALL-SAFE PRO<sup>®</sup> connection box is installed and the customer has potential transformers and current transformers already installed. We supply the ALL-SAFE PRO<sup>®</sup> with 0.02-5A current transformers that are installed onto the output of the existing 0-5A output current transformers. Voltage connection is made to the existing potential transformers.



P.O. Box 1139 • Old Saybrook, CT 06475, USA

Phone: (860) 399-4222 • Fax: (860) 399-3180 • Email: [info@alltestpro.com](mailto:info@alltestpro.com) • Web Site: [www.alltestpro.com](http://www.alltestpro.com)



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**NOTE:** Special split-core current transformers are available for the ALL-SAFE PRO® connection box on a special order basis. They are available with a higher insulation class rating compared to the standard solid core current transformers. I.e. 6.6kV

We do not supply permanently installed potential transformers, but they are usually available from industrial electrical supply companies. Potential transformers and current transformers are commonly used in electrical metering systems to monitor motor or generator systems above 600V.

The part number for the portable 5KV potential transformers is 45006 and this is a special order item. For pricing contact [sales@alltestpro.com](mailto:sales@alltestpro.com). Here are the specifications:



Each probe comes with a hook attachment to facilitate hands-free measurement and long term monitoring of 5KV lines. Each probe has a ground clamp, a neutral connector and a reduced voltage connector. The connectors are safety banana plugs. Each lead is labeled to advise how to use it.

The 5KVP comes as a set of three probes. Each probe is 14 inches long and weighs less than a pound. The fully extended length of the leads and probes is 7 feet.

The output is accurate to within  $\pm 1\%$  for voltages between 600 and 5000 Vrms at 50Hz and 60Hz. The ability to measure harmonics declines less than 1 db from 50 to 900 Hz.



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The part number for the portable 15KV potential transformers is 45007 and this does not include the hot stick. Hot sticks are also available for purchase. This is also a special order item and contact [sales@alltestpro.com](mailto:sales@alltestpro.com) for pricing.



Each 15KVP is 16 inches long and 1.5 inches in diameter. They connect to high voltage lines via an open hook that is 1.3 inches in diameter. The hook is screwed into the end of the probe. It can be replaced with other custom attachments. The bottom of the 15KVP has a recessed threaded coarse 5/8" hole for mounting to a hot stick. The 15KVP is lifted into position via a hot stick.

The output is linear to within  $\pm 2\%$  for voltages between 2400 and 15000 Vrms. The ability to measure harmonics declines 1 db from 50 to 900 Hz (11% attenuation at 15<sup>th</sup> harmonic of 60 Hz or 18<sup>th</sup> harmonic of 50 Hz).

**NOTE:** When using either the 5KV or the 15KV potential probes, the correct voltage input ratio needs to be entered into the ATPOL II itself and not the ESA software. However, the CT current ratio will still need to be entered into the ESA software (not the ATPOL II itself). This is different from when you connect to existing customer supplied PT's where the voltage ratio is entered into the ESA software and not the ATPOL II.



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