

## 80K-15 *Electronic Air Cleaner Probe*

### *Instruction Sheet*

#### **Introduction**

The 80K-15 Electronic Air Cleaner Probe (hereafter referred to as “the probe”) is a low energy probe that extends the voltage measuring capability of an ac/dc voltmeter or multimeter.

Properly connected, the probe is rated to 15 kV Overvoltage Category I. The use of the probe is restricted to low energy applications, which are energy limited circuits like electrostatic air cleaners. ***Do not use this probe to measure high voltages on power distribution systems.***

The probe is a precision 1000 : 1 voltage divider formed by two matched resistors. The unusually high input impedance offered by these resistors minimizes circuit loading and thereby optimizes measurement accuracy.






#### **⚠ Read First: Safety Information**

##### **⚠ Warning**

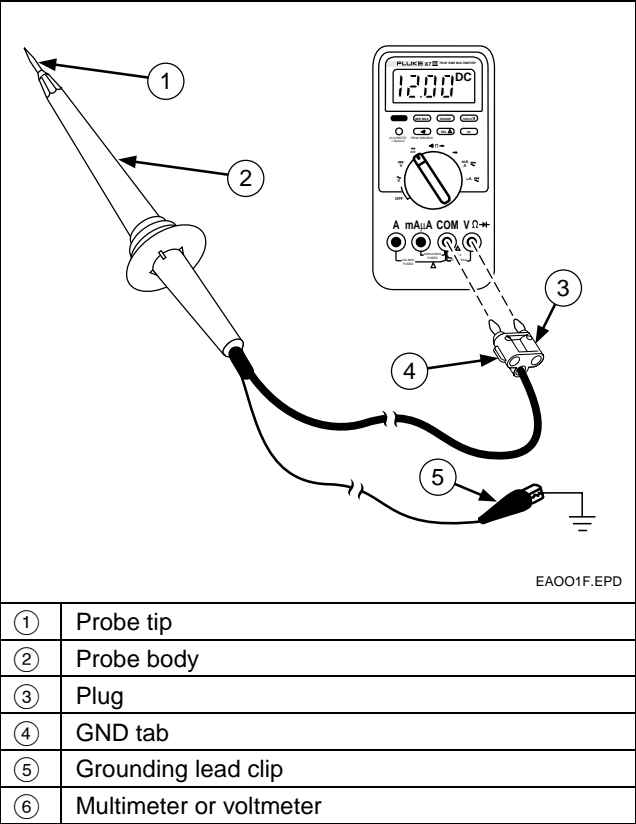
**To avoid possible personal injury or electrical shock:**

- Use the probe within its voltage ratings and in dry conditions (no condensation is present).
- Be familiar with and exercise all possible high voltage safety practices.
- DO NOT use this probe to measure high voltage on power distribution systems.
- Always hold the probe by its gray handle. Never allow the probe tip or the yellow part of the probe to make body contact.
- Before making a measurement, make sure that the side of the probe plug with the GND tab is plugged into the low (COM) terminal of the meter.
- Attach the grounding lead to earth ground.
- Use a meter with an impedance of 10 M $\Omega$  (  $\pm$  1% ). Using a meter with an input impedance less than 10 M $\Omega$  reduces the accuracy of the reading by causing it to be lower than the voltage present.
- DO NOT use the probe with a Fluke multimeter that is in the  $\text{\textcircled{V}}$ Chek™ or Automatic Selection mode (i.e. Fluke 16, Fluke 12B etc.). The input impedance in these modes is very low.
- Make sure the probe tip is firmly attached to the body of the probe.
- DO NOT use the probe around explosive gas, vapor, or dust.
- DO NOT use the probe if it operates abnormally. Protection may be impaired. When in doubt have the probe serviced.

**Symbols**

	Double insulated.
	Refer to explanation in this instruction sheet.
	Lethal voltages may be present.
	Complies with relevant Canadian Standards Association directives.
	Earth ground

**Using the Probe**



**Figure 1. 80K-15 Electronic Air Cleaner Probe**

The 80K-15 (Figure 1) is designed to work with a meter that has an input impedance of 10 MΩ ( ± 1% ). A meter with an input impedance less than 10 MΩ can produce readings lower than the voltage present. This can pose a serious hazard when a dangerous voltage is present.

The 80K-15 represents a 1000 MΩ load to the circuit being measured, or 1 μA per 1 kV. Table 1 shows the circuit loading and input/output characteristics of the probe over its measurement range.

Taking care to follow the safety practices under “⚠Read First: Safety Information,” use the probe as follows:

1. Turn on a compatible voltmeter or multimeter and select the voltage measurement function.
2. Select an appropriate voltage range (i.e., 1 volt reading per 1000 volt input. See Table 1).
3. Connect the probe’s output leads to the voltmeter or multimeter input terminals.

4. Connect the alligator clip of the probe’s grounding lead to earth ground.
5. Touch the probe tip to the circuit being measured and read the measurement on the meter display. If necessary, apply a correction factor to the reading. (See “Note” in the “Specifications,” below.

**Table 1. 80K-15 Circuit Loading and Input/Output Characteristics**

Input Voltage	Loading Current	Output Voltage
10 V	10 nA	10 mV
100 V	100 nA	100 mV
1 kV	1 μA	1 V
10 kV	10 μA	10 V
15 kV	15 μA	15 V

**Specifications**

The 80K-15 Electronic Air Cleaner Probe achieves its rated accuracy when it is used with a voltmeter or multimeter (ac or dc) with an input impedance of 10 MΩ ± 1%.

The accuracy of the probe does not include the accuracy of the meter. To get the accuracy of the system, the accuracy of the meter must be added to the accuracy of the probe.

*Note*

*The input impedance of the Autoranging mode on Fluke handheld digital multimeters varies by range.*

*The input impedance in almost all ranges of Fluke multimeters is ~10 MΩ. The exceptions are: the 3 V range on the Fluke Models 21, 23, 25, 27, 70, 73, 75, 7; and the 4 V range on the Models 10, 11, 12, 16, 79, 83, 85, 86, 87, 88. In the ranges on these multimeters, the impedance is 11.11 MΩ.*

*To improve the measurement accuracy of the probe when using these ranges on the models indicated, apply a correction factor of 0.99 i.e., multiply the display reading by 0.99.*

<b>Voltage Range:</b>	1 kV to 15 kV dc or peak ac, 10 kV rms ac
<b>Maximum Current:</b>	20 μA
<b>Input Resistance:</b>	1000 MΩ
<b>Division Ratio:</b>	1000 : 1 (1000 x attenuation)
<b>Accuracy DC:</b>	± 2 % in 10 °C to 45 °C
<b>Accuracy AC:</b>	± 5 % @ 60 Hz, in 20 °C to 30 °C
<b>Safety:</b>	Complies with IEC 1010-2-31:1993, Type B, 15 kV dc or peak ac, 10 kV rms ac, Overvoltage Category I (voltages derived from limited energy transformer).
<b>Altitude:</b>	2000 meters

## ***Performance Test***

Verify the accuracy of the probe by measuring a 15 kV dc ( $\pm 0.25\%$ ) voltage source. When used with a compatible dc voltmeter, the probe should measure the source with  $\pm 1\%$  accuracy. No calibration adjustments are needed.

## ***Warranty***

### **LIMITED WARRANTY & LIMITATION OF LIABILITY**

This Fluke product will be free from defects in material and workmanship for one year from the date of purchase. This warranty does not cover fuses, disposable batteries or damage from accident, neglect, misuse or abnormal conditions of operation or handling. Resellers are not authorized to extend any other warranty on Fluke's behalf. To obtain service during the warranty period, send your defective tester to the nearest Fluke Authorized Service Center with a description of the problem.

THIS WARRANTY IS YOUR ONLY REMEDY. NO OTHER WARRANTIES, SUCH AS FITNESS FOR A PARTICULAR PURPOSE, ARE EXPRESSED OR IMPLIED. FLUKE IS NOT LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES OR LOSSES, ARISING FROM ANY CAUSE OR THEORY. Since some states or countries do not allow the exclusion or limitation of an implied warranty or of incidental or consequential damages, this limitation of liability may not apply to you.

Fluke Corporation  
P.O. Box 9090  
Everett, WA.  
98206-9090

Fluke Europe B.V.  
P.O. Box 1186  
5602 B.D. Eindhoven  
The Netherlands

10/96

## ***Contacting Fluke***

**For application or operation assistance, or information on Fluke products, call:**

**USA: 1-888-99-FLUKE (1-888-993-5853)**  
**Canada: 1-800-36-FLUKE (1-800-363-5853)**  
**Europe: +31 402-678-200**  
**Japan: +81-3-3434-0181**  
**Singapore: +65-738-5655**  
**Anywhere in the world: +1-425-446-5500**

**Or, visit Fluke's Web site at [www.fluke.com](http://www.fluke.com).**



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



#### Как с нами связаться

**Телефон:** 8 (812) 309 58 32 (многоканальный)

**Факс:** 8 (812) 320-02-42

**Электронная почта:** [org@eplast1.ru](mailto:org@eplast1.ru)

**Адрес:** 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.