

brandenburg 149 SERIES

High Voltage Meter Series

Input Z	10G & 100G Ohms
Input Voltage	40kV
Input Voltage	60kV



SPECIAL FEATURES

- 4½ digit LCD display
- High input impedance
- Positive and negative reading without switching
- Voltage coefficient compensated
- Accuracy better than $\pm 0.05\%$
- Precision output for recorder or oscilloscope
- 40kV hand probe supplied with 149-01 & -03
- Rugged construction

ENVIRONMENTAL

Operating temperature	0 to +50 deg.C
Storage temperature	-20 to +65 deg.C
Humidity (RH)	<31°C 80% maximum. >30°C decrease linearly to 50% at 40°C (non-condensing) For indoor use only.

SAFETY

Designed to meet EN 61010

CAUTION

Great care must be taken when making measurements in high voltage circuits. **ALWAYS** ensure that the HV Return terminal of the meter is grounded. **DO NOT** use hand-held probes on supplies that are potentially lethal.

ELECTRICAL SPECIFICATION

	149-01 & 149-03 only
Voltage ranges	0 to 2kV dc, 20kV dc & 40kV dc.
Resolution	0.1V on 2kV range, 1V on 20kV range and 10V on 40kV range.
Accuracy	$\pm 0.1\%$ on the 2kV, 20kV & 40kV ranges
HV input	Supplied with plug & 40kV hand held probe (with 2m of cable, see drawings).

	149-02 & 149-04 only
Voltage ranges	0 to 2kV dc, 20kV dc & 60kV dc.
Resolution	0.1V on 2kV range, 1V on 20kV range and 10V on 60kV range.
Accuracy	$\pm 0.05\%$ on the 2kV, 20kV & 60kV ranges
HV input	Supplied with plug & 1m of screened 60kV cable assembly.

	149-01 and 149-02 only
Input resistance	10G Ω on all ranges

	149-03 and 149-04 only
Input resistance	100G Ω on all ranges

	149 (all in the series)
Stability	Better than 0.3% over 1 year.
Polarity	Positive or negative, auto reading.
Protection	Circuits protected against damage by external arcing, flashover etc.
Recorder output	10mV per kV (Source/sink capability up to 100 μ A.) Accuracy $\pm 0.3\%$ at 30kV ($\pm 0.5\%$ at the extremes).

Range kV	Accuracy %	Scale mV/kV	Temp Co. ppm/C
2	0.3	1000	150
20	0.1	100	75
40/60	0.3	10	75

	Initial offset 3mV typ.
	Thermal drift <150 ppm per deg.C.
	Long term drift <0.5% over 1 year.
Controls	Push button power On / Off and range selection.



Toll free (USA Only) : 1866 825 6641

**APPLIED
KILOVOLTS**

Tel +44 (0)1384 840 840 UK: Fax +44(0) 1384 840 841
14/5/07

ORDERING INFORMATION

149 SERIES

Range(s)	Accuracy	Input resistance	Ordering Code
2kV, 20kV & 40kV	±0.1%	10GΩ	149-01
2kV, 20kV & 60kV	±0.05%	10GΩ	149-02
2kV, 20kV & 40kV	±0.1%	100GΩ	149-03
2kV, 20kV & 60kV	±0.05%	100GΩ	149-04

Spares & Probes

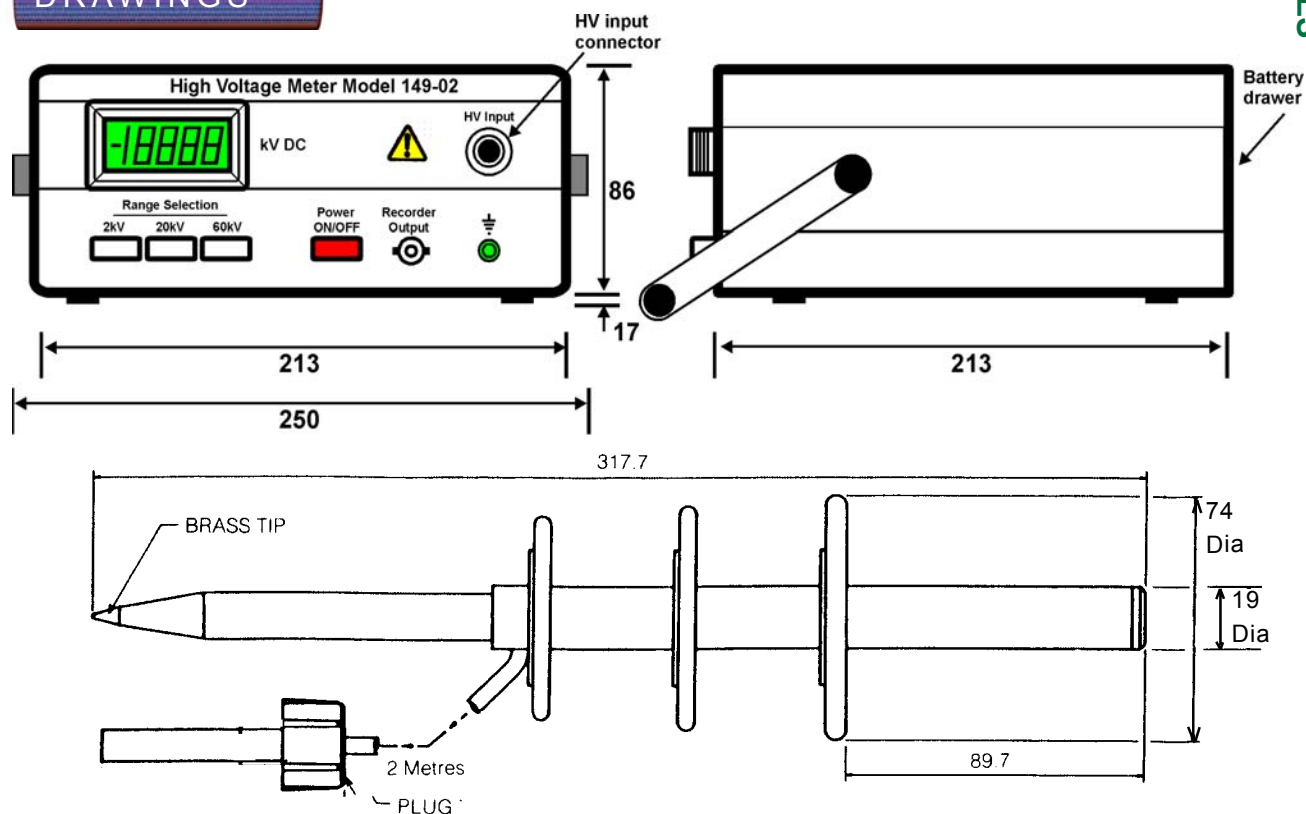
40 kV Probe for use with 149-series, MAX 40kV! (as supplied with 149-01 & -03)	BB-1495-08
Beryllium copper flat probe tip (for use with BB-1495-08)	BB-0593-01
Pointed probe tip (for use with BB-1495-08)	BB-1495-06
40kV In-line CRT probe (use with 149-01 & 149-02)	BB-1495-12
Replacement battery (Alkaline 9V)	098G51002000
Recorder output lead (BNC-1.2m coax -2 off 4mm plugs)	BB-1495-11
60kV plug and 2m of screened cable assembly (use with 149-02 & -04)	BB-1495-10
40kV plug and 2m of un-screened cable assembly (use with 149-01 & -03)	BB-1495-09

Ordering Code

MECHANICAL SPECIFICATION AND BATTERY

Dimensions	203 x 213 x 86mm (plus connectors & handle).	Battery type	One "PP3" 9V alkaline battery, Ni- Cd or equivalent.
Weight	1.35 kg including batteries	Battery life	Approx. 500 hours of continuous operation from an alkaline battery.
HV input	Brandenburg screw coupling connector	Battery check	Automatic: "BAT" shown on LCD display when battery is low.
HV return	4 mm binding post terminal on front panel.		
Recorder	1 off BNC socket on front panel.		

DRAWINGS



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