

HVDP-8k



High Voltage differential probes

Description

The HVDP high voltage differential probe is a reliable and accurate voltage sensing device designed to maintain a precise attenuation value over a wide frequency range.

Utilising custom designed high voltage, high frequency resistors, the HVDP maintains a frequency response over a range from dc to 100kHz that is more accurate than could be obtained with conventional high voltage oscilloscope probes.

The active circuitry provides a low impedance output which does not need to be trimmed to adjust to the characteristics of the measurement input.

The probes are fully differential. The probes are supplied with unterminated input leads for the user to make the appropriate connections.

IMPORTANT SAFETY INSTRUCTIONS

The HVDP voltage probe is designed for use in a high voltage environment by suitably trained personnel - **observe the following precautions:**

- The HVDP probe is to be installed and operated only by suitably qualified personnel.
- **Ensure that all power is off when making connections to the probe.**
- The HVDP case must be connected to a secure safety earth before making connections to the input.
- Ensure that the voltage inputs are connected correctly **before** energising the load to be measured.
- Ensure that the input leads are not damaged each time **before** energising the load.
- Do not exceed the voltage rating.
- Ensure adequate ventilation and airflow to prevent an excessive temperature rise of the probe. If the probe is used in an enclosed environment then forced ventilation may be required.
- Do not use in a wet environment or under conditions where condensation may occur.
- There are no user serviceable parts inside the HVDP probe – **do not attempt to open the case**, refer service to the manufacturer or his appointed agent.

Note: Newtons4th Ltd. shall not be liable for any consequential damages, losses, costs or expenses arising from the use or misuse of this product however caused.

Warranty

This product is guaranteed to be free from defects in materials and workmanship for a period of 36 months from the date of purchase.

In the unlikely event of any problem within this guarantee period, first contact Newtons4th Ltd. or your local representative, to give a description of the problem. If the problem cannot be resolved directly then you will be given an RMA number and asked to return the unit. The unit will be repaired or replaced at the sole discretion of Newtons4th Ltd.

This guarantee is limited to the cost of the HVDP probe itself and does not extend to any consequential damage or losses whatsoever including, but not limited to, any loss of earnings arising from a failure of the product.

In the event of any problem with the equipment outside of the guarantee period, Newtons4th Ltd. offers a full repair service – contact your local representative.

Declaration of Conformity

We, Newtons4th Ltd, declare that the product HVDP-8k conform to the requirements of Council Directives:

2014/30/EU relating to electromagnetic compatibility:
EN 55022 Class A

2014/35/EU relating to safety of laboratory equipment:
EN 61010-1:2010
EN 61010-2-30:2010

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Stuart Chappell
(Director of Newtons4th Ltd)

Unpacking

Inside the box there should be the following items:

One HVDP series probe
One 2M BNC to BNC cable
One 12Vdc mains adaptor
This User Guide

How to use

Fit appropriate terminations to the input leads and with power off, connect the inputs to the voltage to be measured.

Connect the 12V mains adaptor and observe that the yellow power led is illuminated.

Connect the BNC output to the input of the measurement device, such as the external input of a PPA series power analyser. Set the attenuation ratio on the instrument to 3000:1.

Specification

Model	Attenuation ratio	Input Resistance $\pm 1\%$	Bandwidth	Maximum peak voltage including any transients	Maximum continuous rms or dc voltage
HVDP-8k	3000:1	9.9M Ω	100 kHz	8kV peak	5.6kV rms

Power supply requirements: +12Vdc $\pm 5\%$ 1W max
Output impedance 50Ohms $\pm 1\%$

Accuracy:

40Hz~100kHz: $\pm [0.1\% + 0.01\%/kHz + (0.0002\%(V_{cal} - V_{rdg}))]$ rdg

DC: $\pm [0.2\%rdg + 0.06\% f.s.]$
Vcal = calibrated voltage level

f.s. = 5.6kVrms

Voltage range 50V~5.6kVrms

CMRR typ: 60dB at 1kHz, 50dB at 10kHz, 40dB at 100kHz

Derating: No derating up to 250kHz

Note: Unit is designed to drive into high impedance (1M Ω nominal)
Accuracy between DC and 40Hz derived using linear interpolation