TELEDYNE LECROY
Everywhereyoulook™

HVD3000 High Voltage Differential Probes

Key Features

- **Differential voltage measurement capability up to 1000 Vrms**
- **Exceptional common-mode rejection ratio (CMRR) across a broad frequency range**
- **Wide differential voltage range of 1500 Vp-p, 2000 Vp-p before saturation for capture of short duration overshoots**
- **High offset capability at both high and low attenuation**
- **1% DC and low frequency gain accuracy**
- **ProBus active probe interface with automatic scaling**
- **Auto-zero capabilities**

The HVD3000 high voltage differential probes provide high CMRR over a broad frequency range to simplify the measurement challenges found in noisy, high common-mode power electronics environments. The probe's design is easy-to-use and enables safe, precise high voltage floating measurements.

Exceptional Common-Mode Rejection Ratio

The CMRR for the probes is exceptional out to very high frequencies, greatly improving measurement capability in noisy, high common-mode environments found in power electronics. The high CMRR combined with low probe noise and high offset capability makes the probes capable of measuring very small control signals floating on high common-mode voltages.

High Precision Measurements

HVD probes provide 1% DC and low frequency gain accuracy enabling precise voltage measurements. AutoZero capability ensures further measurement precision by allowing small offset drifts to be calibrated out of the measurement.

Wide Differential Voltage Range

The wide voltage range of 1500 Vp-p enables flexible probing in a variety of floating measurement applications. Beyond that limit, the HVD probes can be safely operated up to 2000 Vp-p for capturing short duration overshoots. With the HVD connected, the oscilloscope vertical sensitivity ranges from 400 V/div (3200 V on screen) to display high voltage signals, down to 100 mV/div to show the small details.

Complete Probe Integration

The ProBus interface provides power and communication to the probe eliminating the need for a separate power supply or batteries. Attenuation is automatically selected based on oscilloscope gain range (V/div) setting.

SPECIFICATIONS AND ORDERING INFORMATION

Specifications

	HVD3102	HVD3106	HVD3106-6M
Bandwidth	25 MHz	120 MHz	80 MHz
Rise Time (10-90)	14 ns	2.9 ns	4.4 ns
Differential Voltage Range	**High Attenuation** 1500 V (DC + peak AC) from 7 to 400 V/div with up to 1500 V offset. 2000 V maximum typical measurable differential voltage before saturation **Low Attenuation** 27.6 V (DC + peak AC) from 100 mV/div to 6.9 V/div with up to 150 V offset.		
Common Mode Voltage Range	±1500 V (DC + peak AC), 1000 V_{rms} (CAT III) (either input to ground)		
Maximum Input Voltage to Earth	1000 V_{rms} (CAT III) (either input to ground)		
Max Safe Input	1000 V_{rms} CAT III		
Sensitivity	100 mV/div to 6.9V/div (100X) 7V/div to 400V/div (1000X)	100 mV/div to 6.9V/div (50X) 7V/div to 400V/div (500X)	100 mV/div to 6.9V/div (50X) 7V/div to 400V/div (500X)
Gain Accuracy	1% (LF, guaranteed)		
Slew Rate	100 V/ns (maximum)	400 V/ns (maximum)	400 V/ns (maximum)
Attenuation	100x / 1000x	50x / 500x	50x / 500x
Input Impedance	10 MΩ || 2.5 pF (between inputs), 5 MΩ || 5.0 pF (either input to ground)		
Input Coupling	DC only		
Output Coupling	AC, DC, GND		
Output Termination	1 MΩ		
Interface	ProBus		
Input Lead Length	40 cm input lead length		
Cable Length (input lead to oscilloscope connection)	2.25 m		6.80 m

Noise and Rejection

CMRR (Typical)	DC - 60 Hz: 80 dB 1 MHz: 65 dB 5 MHz: 40 dB 20 MHz: 30 dB	DC - 60 Hz: 80 dB 1 MHz: 65 dB 5 MHz: 40 dB 20 MHz: 30 dB 100 MHz: 30 dB	DC - 60 Hz: 80 dB 1 MHz: 65 dB 5 MHz: 40 dB 20 MHz: 30 dB 80 MHz: 30 dB
Noise (Probe)	100X: <15 mV_{rms} 1000X: <85 mV_{rms} (referred to input)	50X: <30 mV_{rms} 500X: <150 mV_{rms} (referred to input)	50X: <30 mV_{rms} 500X: <150 mV_{rms} (referred to input)

Environmental

Temperature (Operating)	0°C to 50°C
Temperature (Non-Operating)	-40°C to 70°C
Humidity (Operating)	5% to 80% RH (Non-Condensing) up to 30°C, decreasing linearly to 50% RH at 50°C
Humidity (Non-Operating)	5% to 95% RH (Non-Condensing), 75% RH above 30°C, 45% RH above 40°C
Altitude (Operating)	2,000 m maximum (3,000 m maximum at 25°C)
Altitude (Non-Operating)	10,000 m
Pollution Degree	2, Indoor use only

Ordering Information

Product Description	Product Code
25 MHz, High Voltage Differential Probe	HVD3102
120 MHz, High Voltage Differential Probe	HVD3106
80 MHz, High Voltage Differential Probe with 6m cable	HVD3106-6M
High Voltage Replacement Accessories Kit (Includes 2 each, 1 Black, 1 Red): Safety Alligator Clips, Plunger Pincer Clips, Plunger Hook Clips, Plunger Alligator Clips, Spade Terminals	PK-HV-001
Safety Alligator Clips (Quantity 2 - 1 Black, 1 Red)	PK-HVA-01
Plunger Pincer Clips (Quantity 2 - 1 Black, 1 Red)	PK-HVA-02
Plunger Hook Clips (Quantity 2 - 1 Black, 1 Red)	PK-HVA-03
Plunger Alligator Clips (Quantity 2 - 1 Black, 1 Red)	PK-HVA-04
Spade Terminals (Quantity 2 - 1 Black, 1 Red)	PK-HVA-05

Customer Service

Teledyne LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years and our probes are warranted for one year. This warranty includes:

- No charge for return shipping
- Long-term 7-year support
- Upgrade to latest software at no charge

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1-800-5-LeCroy
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Local sales offices are located throughout the world.
Visit our website to find the most convenient location.

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