

HIGH VOLTAGE DIFFERENTIAL PROBES

DP31 SERIES



FEATURES

The DP31 series probes offer new and innovative technologies that allow a significant increase in performance over conventional HV differential probes. This and other proprietary technologies improve the performance of our probes by a factor of ten times compared to others when used with high, common mode slew rate input signals. These probes offer high accuracy along with very low offset voltage. A specially designed instrumentation power supply has been used to increase stability and minimize noise levels. LVC models offer higher accuracy due to use of low voltage and temperature coefficient internal components. All probes have a 50 Ω output impedance for properly driving very long length coaxial cables. This makes it ideal for off-limit test areas which are outside of the main laboratory.

HIGHLIGHTS & FEATURES

- Low Input Capacitance
- 75 MHz Bandwidth
- Up To 10 kV RMS, 15 kV Peak
- Two Standard and Two Precision Models, up to 0.1% DC Accuracy
- Unmatched Performance when Measuring High CM Slew Rate Signals
- Digital Offset Adjustment
- 6V DC in 50 Ω Output Capability

APPLICATIONS

Our probes excel in power conversion system testing. Their low input capacitance reduces circuit loading at high frequencies. The DP31 series has a high resonant input frequency, greater than 150MHz, making them prime candidates for applications requiring good accuracy at high frequencies. A proprietary input stage prevents undesirable HF oscillations that are often found in other probes when making extremely high slew rate measurements. DP31 probes can be used in automotive industry, especially for R&D on electrical and hybrid vehicles. Other applications include megawatt traction inverters, power supply design, power generation, UPS's, electro-magnetic systems, high energy research, fusion research and surge testing.

The DP31 can be mounted inside systems allowing users to replace lower performance voltage measuring modules. Other possible uses are for monitoring of in-system power switching devices for failure prevention in ultra-reliable equipment.

Custom versions are available on request.

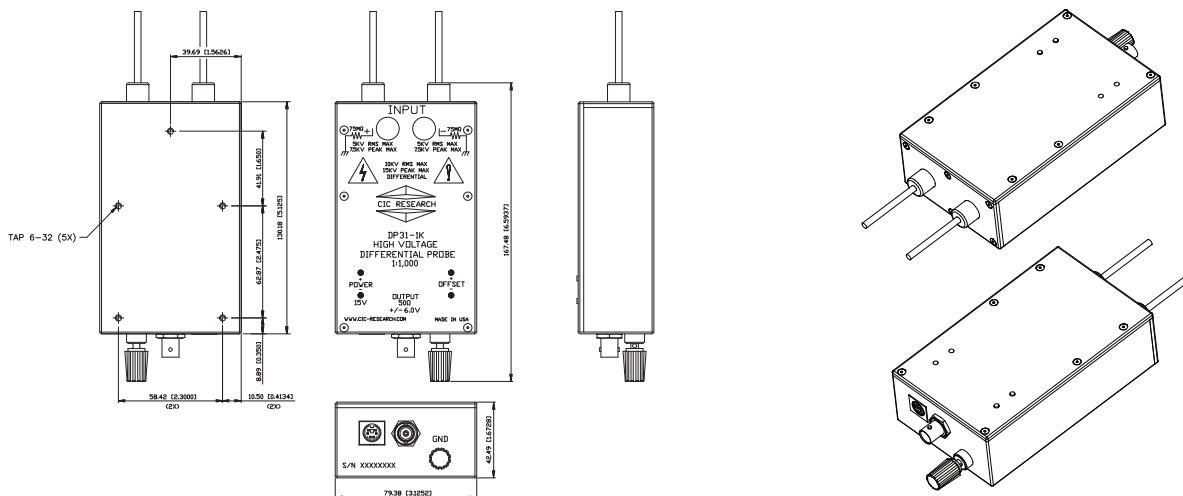
GENERAL SPECIFICATIONS AND CHARACTERISTICS

INPUT	DP31-1K	DP31-1K-LVC	DP31-2K	DP31-2K-LVC
Input Voltage CM RMS Max	5 kV		5 kV	
Input Voltage CM Peak Max	7.5 kV		7.5 kV	
Input Voltage CM Peak Max*	7.5 kV		7.5 kV	
Input Voltage DM RMS Max	10 kV		10 kV	
Input Voltage DM DC/Peak	6 kV (Measurable)		12 kV (Measurable)	
Input Voltage DM Peak Max*	15 kV		15 kV	
Bandwidth	75 MHz			
Division Ratio	1:1,000		1:2,000	
Input impedance	75 MΩ 2 pF each input to GND			
OUTPUT				
Output Voltage DC, RMS	±6.0 V			
Output Voltage Peak	±7.0 V			
Output Impedance	50 Ω (50 Ω termination is required)			
Rise Time	<4.7 ns			
Offset	±600 μV digitally adjustable (~19 μV/step) using the up (+) and down (-) momentary offset switches			
Accuracy	1%	0.1%	1%	0.1%
Noise	70 μVrms			
Common Mode Rejection				
100Hz	-140 dB	-150 dB	-140 dB	-150 dB
100KHz	-110 dB	-120 dB	-110 dB	-120 dB
10MHz	-100 dB	-110 dB	-100 dB	-110 dB
MECHANICAL				
Case Cover	Aluminum			
Dimensions (L x W x D)	5.125" X 3.125" X 1.675" (130 mm X 79 mm X 43 mm)			
Unit Weight	1.27 lb (575g)			
Cooling System	Convection			
Input Connector	4 mm safety plugs			
Output Connector	50Ω BNC			
Power	±15.2 V @ 150 mA			
ENVIRONMENT				
Operating Temperature	-40° C to +85° C			
Storage Temperature	-55° C to +100° C			

Notes

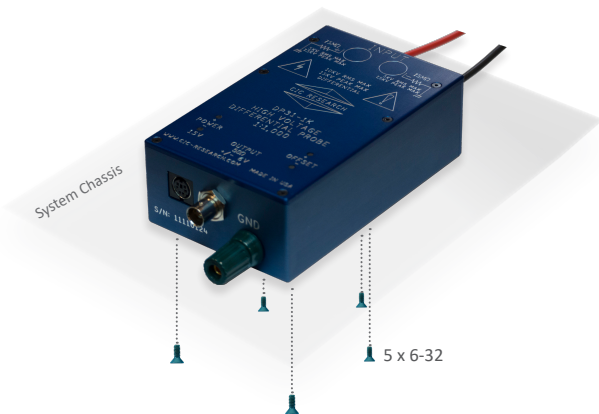
- 1) At 25°C ambient temperature horizontal mounting orientation.
- 2) All parameters are typical specified at 25°C ambient temperature unless otherwise indicated.
- 3) Information and specifications contained within this publication may change without notice.
- 4) Non-Measurable. Peak voltages can be applied for <5 s.
- 5) CM stands for Common Mode and DM for Differential Mode.

MECHANICAL DRAWINGS



SYSTEM MOUNTING

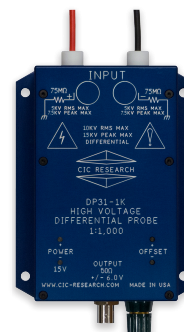
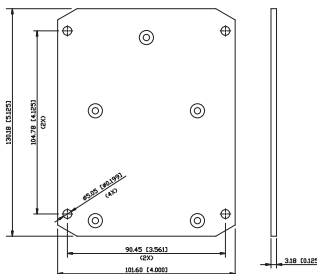
DIRECT MOUNTING



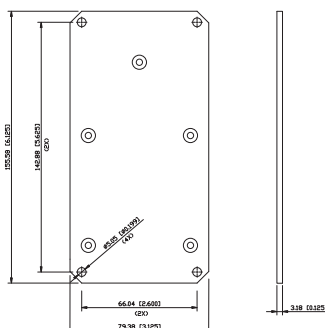
DP31 series probes can be mounted directly on a base plate or enclosure walls with 5 x 6-32 screws.

Optional mounting flange models are available, shown below. These can be mounted with 4 x 10-32 (or M5) screws.

MOUNTING FLANGE TYPE A



MOUNTING FLANGE TYPE B



Note: Units are - mm [in]