

# HIGH VOLTAGE DIFFERENTIAL PROBES

## DP03 SERIES



### FEATURES

The DP03 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 accuracy along with very low offset voltage. A specially designed instrumentation power supply has been used to increase the stability and minimize noise levels. The 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 8 kV RMS, 12 kV Peak
- Three Standard and Three 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 DP03 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. DP03 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 DP03 can be mounted inside systems allowing users to replace lower performance voltage measuring modules. Other possible uses are for close monitoring of in-system power switching devices for failure prevention in ultra-reliable equipment. Custom versions are available on request.

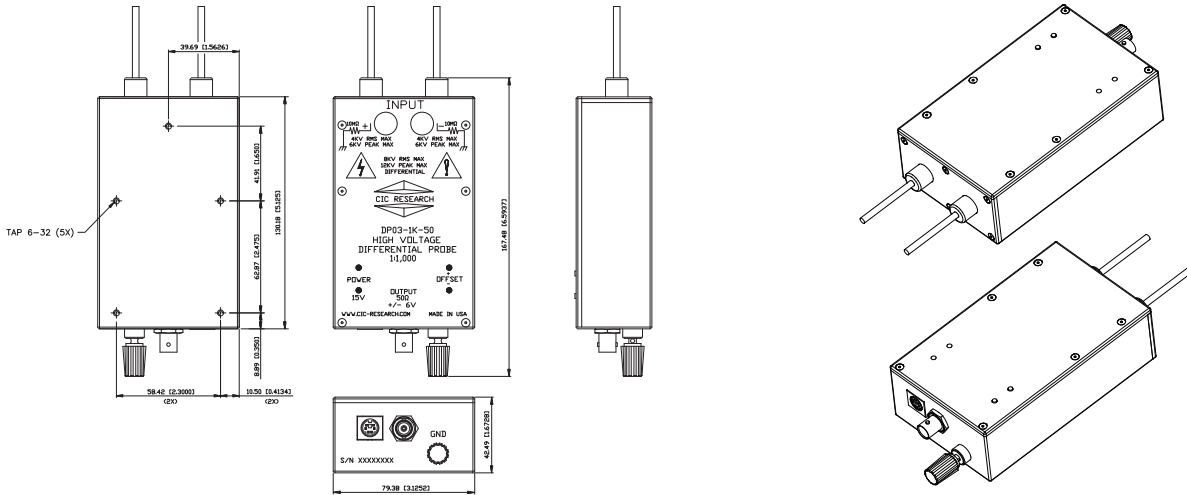
### GENERAL SPECIFICATIONS AND CHARACTERISTICS

INPUT	DP03-100-50	DP03-100-LVC-50	DP03-1K-50	DP03-1K-LVC-50	DP03-2K-50	DP03-2K-LVC-50
Input Voltage CM RMS Max <sup>1</sup>	1.0 kV		4.0 kV			
Input Voltage CM Peak Max	600 V		4.0 kV			
Input Voltage CM Peak Max <sup>1</sup>			6.0 kV			
Input Voltage DM RMS Max <sup>1</sup>	2.0 kV		8.0 kV			
Input Voltage DM Peak	600 V		6.0 kV		12 kV	
Input Voltage DM Peak Max <sup>1</sup>			12.0 kV			
Bandwidth			75 MHz			
Division Ratio	1:100		1:1,000		1:2,000	
Input impedance	1 MΩ    2.2 pF each input to GND		10 MΩ    2.2 pF each input to GND			
<b>OUTPUT</b>						
Output Voltage DC, RMS	±6.0 V					
Output Voltage Peak	±7.00 V					
Output Impedance	50 Ω (50 Ω termination is required)					
Risetime	<4.7 ns					
Offset	±580 μV digitally adjustable (~36 μV/step) using the up (+) and down (-) momentary offset switches					
Accuracy	1.0%	0.1%	1.0%	0.1%	1.0%	0.1%
Noise	70 μVrms					
Common Mode Rejection						
100Hz	-120 dB	-130 dB	-140 dB	-150 dB	-145 dB	-155 dB
100KHz	-100 dB	-110 dB	-110 dB	-120 dB	-115 dB	-125 dB
10MHz	-90 dB	-100 dB	-100 dB	-110 dB	-100 dB	-110 dB
<b>MECHANICAL</b>						
Case Cover	Aluminum (Aluminium)					
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 Leads	4 mm safety plugs					
Output Terminal	50Ω RG223 BNC-BNC					
Power	±15.2 V @ 150 mA					
<b>ENVIRONMENT</b>						
Operating Temperature	-40° C to +85° C					
Storage Temperature	-55° C to +100° C					

#### Notes

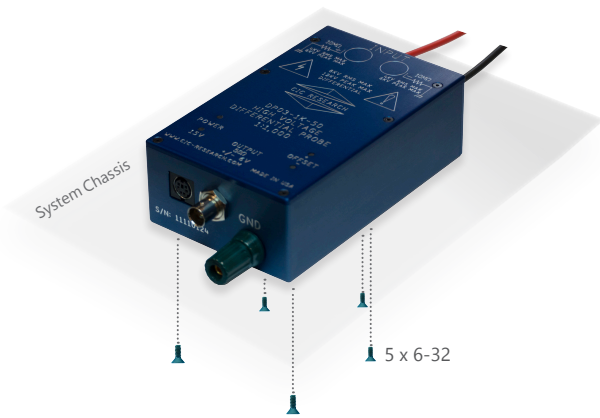
- 1) At 25°C ambient temperature horizontal mounting orientation.
- 2) All parameters are typical specified at 25°C ambient temperature unless otherwise indicated.
- 3) Information and specifications contained within this publication may change without notice.
- 4) Non-Measurable. Peak voltages can be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

### MECHANICAL DRAWINGS



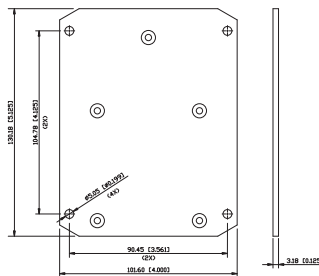
### SYSTEM MOUNTING

#### Direct Mounting

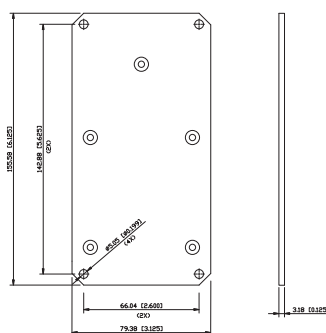


DP03 series probes can be mounted directly on a base plate or enclosure walls with 5 x 6-32 screws. Optional mounting flange models are available, shown below. These can be mounted with 4 x 10-32 (or M5) screws.

#### Mounting Flange Type A



#### Mounting Flange Type B



Note: Units are - mm [in]