

# HIGH VOLTAGE DIFFERENTIAL PROBES

## DP40 SERIES



### FEATURES

The DP40 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 is being 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  $\Omega$  output impedance for properly driving long coaxial cables. This makes them useful for testing in off-limits work areas which are outside of the main laboratory.

### HIGHLIGHTS & FEATURES

- Low Input Capacitance
- 120 MHz Bandwidth
- Up To 24.7 kV RMS, 35 kV Peak
- Two Standard and Two Precision Models with up to 0.1% DC Accuracy
- Excellent Performance when Measuring High CM Slew Rate Signals
- Digital Offset Adjustment
- Low Noise

### APPLICATIONS

Our probes excel in power conversion system testing. Their low input capacitance reduces circuit loading at high frequencies. The DP40 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. DP40 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 DP40 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.

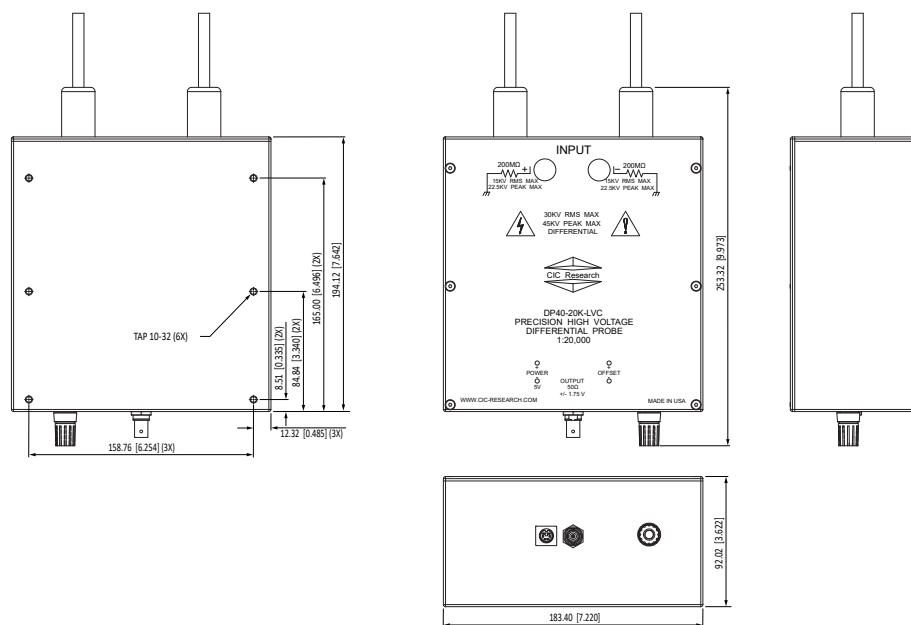
### GENERAL SPECIFICATIONS AND CHARACTERISTICS

INPUT	DP40-10K	DP40-10K-LVC	DP40-20K	DP40-20K-LVC
Input Voltage CM RMS Max	15 kV		15 kV	
Input Voltage CM Peak Max	17.5 kV		22.5 kV	
Input Voltage CM Peak Max <sup>a</sup>	22.5 kV		22.5 kV	
Input Voltage DM RMS Max	12.4 kV		24.7 kV	
Input Voltage DM Peak	17.5 kV (Measurable)		35 kV (Measurable)	
Input Voltage DM Peak Max <sup>a</sup>	45 kV		45 kV	
Bandwidth	120 MHz		120 MHz	
Division Ratio	1:10,000		1:20,000	
Input impedance	200 MΩ    2 pF each input to GND			
OUTPUT				
Output Voltage DC, RMS	±1.75 V			
Output Voltage Peak	±2.00 V			
Output Impedance	50 Ω (50 Ω termination is required)			
Rise Time	<2.9 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%
Noise	70 μVrms			
Common Mode Rejection				
100Hz	-120 dB	-130 dB	-120 dB	-130 dB
100KHz	-100 dB	-110 dB	-100 dB	-110 dB
10MHz	-90 dB	-100 dB	-90 dB	-100 dB
MECHANICAL				
Case Cover	Aluminum			
Dimensions (L x W x D)	7.642" X 7.220" X 3.622" (194.12 mm X 183.40 mm X 92.02 mm)			
Unit Weight	7.07 lb (3.21 kg)			
Cooling System	Convection			
Input Connector	4 mm safety plugs			
Output Connector	50Ω BNC			
Power	±5.20 V @ 100 mA			
ENVIRONMENT				
Operating Temperature	-40° C to +85° C			
Storage Temperature	-55° C to +100° C			

#### Notes

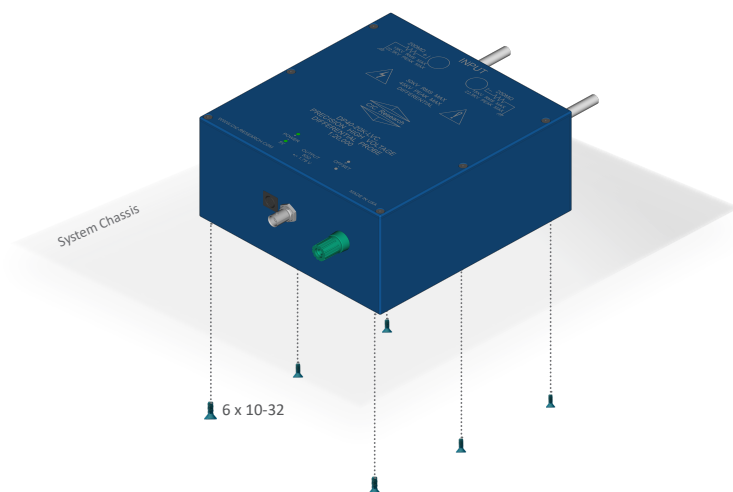
- 1) At 25°C ambient temperature horizontal mounting orientation.
- 2) All parameters are typical specified at 25°C ambient temperature unless otherwise indicated.
- 3) Information and specifications contained within this publication may change without notice.
- 4) Non-Measurable. Peak voltages can be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

## MECHANICAL DRAWINGS



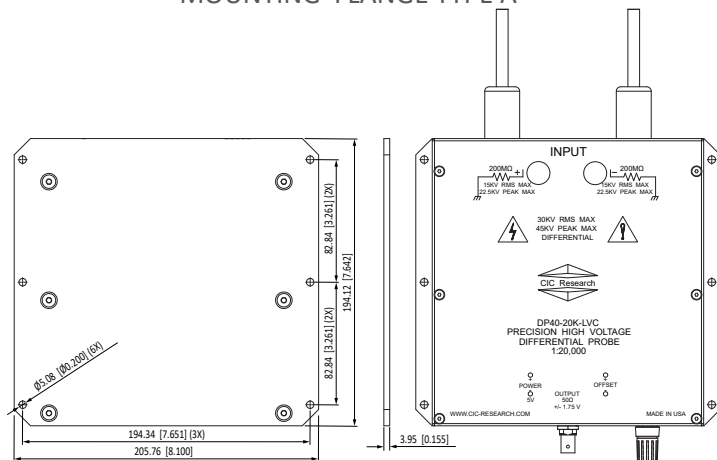
## SYSTEM MOUNTING

### DIRECT MOUNTING



DP40 series probes can be mounted directly on a base plate or enclosure walls with 6 x 10-32 screws.

### MOUNTING FLANGE TYPE A



Note: Units are - mm [in]

### MOUNTING FLANGE TYPE B

