

5. Operation Steps

- 1) Power the probe: Power the probe with standard adapter;
- 2) Connect to oscilloscope: Connect the BNC end of the probe to oscilloscope channel (make sure the oscilloscope is grounded);
- 3) Select Range: Select appropriate voltage range according to the signal;
- 4) Connect the DUT: Use clips or hooks to connect the DUT, if an over-voltage alarm occurs, disconnect the power supply and the circuit immediately;
- 5) Set on the oscilloscope: Set input impedance to $1M\Omega$, adjust the channel attenuation ratio.

*Note: Try not to use extension leads when measuring, it could bring more noise floor. If must use the extension leads, please twist the leads together to reduce noise, and the input frequency should not exceed 5MHz. If it exceeds 5MHz, the output will have a certain error.

6. Warranty

- 1) Micsig warrants the main body of this differential probe for 1 year.
During the warranty period, Micsig will be responsible for free maintenance for any failure caused by the quality of the product under normal use.
- 2) Under the following circumstances, Micsig will refuse to provide maintenance services or charge for a fee:
 - a. No packaging or anti-counterfeiting label.
 - b. Anti-counterfeit label has been altered or blurred beyond recognition.
 - c. Unauthorized disassembly, such as: changing wires, dismantling internal components, etc.
 - d. No sales voucher or the content of sales voucher does not match the product.

7. Safety Precautions

- 1) Non-professionals do not open the product casing;
- 2) Do not use while case is open;
- 3) Do not touch any bare metal while testing;
- 4) Disconnect the power supply and circuit immediately when over range;
- 5) Do not use in flammable and explosive environments;

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Quick Guide

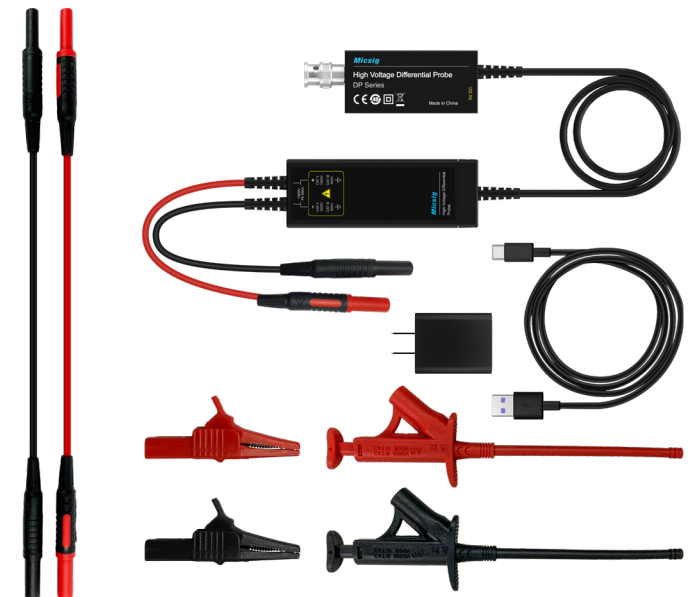
High Voltage Differential Probe -- DP series

Bandwidth: 100MHz / 150MHz / 200MHz

1. Overview

Micsig high-voltage differential probe -- DP series covering bandwidth from 100MHz to 500MHz, differential voltage up to 7000Vpk. Based on the leading optical isolation probe technology, the DP series has very low noise, excellent amplitude-frequency characteristics and high CMRR.

With standard BNC interface, the DP series can work with any oscilloscope; probe body is only 2cm thick, protected by metal housing, achieves strong anti-interference ability. One-press auto Zero, dual-range and overload alarm design. High impedance designed, the single-ended impedance of the input end to the signal output BNC interface $> 8M\Omega$, single-ended capacitance $< 8pF$, meets various safety test requirements. 5MHz bandwidth limit function can effectively filter out high-frequency noise and interference, ideal for switching power supplies, various high-frequency and high-voltage floating or isolated signal tests.



* Extension leads,
twist together can
lower noise

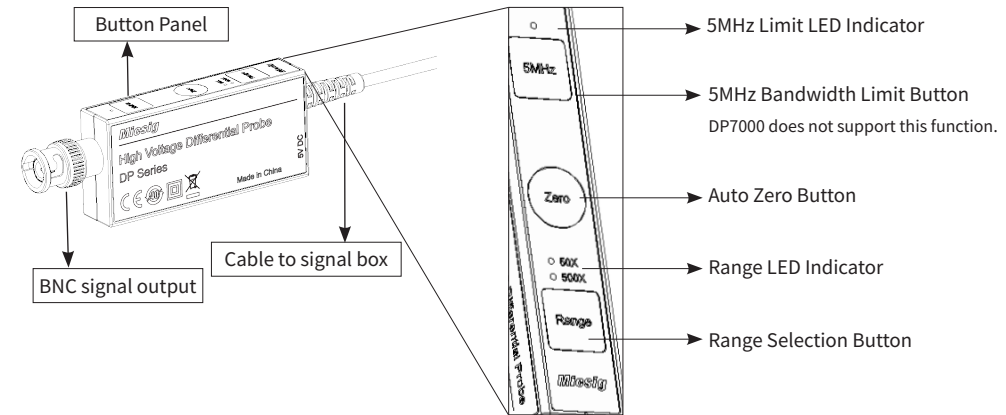
2. Characteristics

| Model | DP700 | DP701 | DP702 | DP1500 | DP1501 | DP1502 | DP3000 | DP3001 | DP3002 | DP7000 |
|--|---|----------|--|---------|--|----------|---|----------|---|---------|
| Bandwidth | 100MHz | 150MHz | 200MHz | 100MHz | 150MHz | 200MHz | 100MHz | 150MHz | 200MHz | 100MHz |
| Rise time | ≤ 3.5ns | ≤ 2.33ns | ≤ 1.75ns | ≤ 3.5ns | ≤ 2.33ns | ≤ 1.75ns | ≤ 3.5ns | ≤ 2.33ns | ≤ 1.75ns | ≤ 3.5ns |
| Attenuation | 20X / 200X | | 50X / 500X | | 100X / 1000X | | 100X / 1000X | | 100X / 1000X | |
| Accuracy | ±2% | | ±2% | | ±2% | | ±2% | | ±2% | |
| Max. input Differential Voltage (DC+AC PK) | 70V (20X) 700V (200X) | | 150V (50X) 1500V (500X) | | 300V (100X) 3000V (1000X) | | 700V (100X) 7000V (1000X) | | 700V (100X) 7000V (1000X) | |
| Max. Voltage to ground | 600V (CAT I) 450V (CAT II) | | 1000V (CAT II) 600V (CAT III) | | 1000V (CAT III) | | 7000Vpk | | 7000Vpk | |
| Noise | Full Bandwidth: 20X: ≤ 22mVrms 200X: ≤ 80mVrms 5MHz bandwidth limit: 20X: ≤ 8mVrms 200X: ≤ 70mVrms | | Full Bandwidth: 50X: ≤ 45mVrms 500X: ≤ 200mVrms 5MHz bandwidth limit: 50X: ≤ 20mVrms 500X: ≤ 175mVrms | | Full Bandwidth: 100X: ≤ 90mVrms 1000X: ≤ 400mVrms 5MHz bandwidth limit: 100X: ≤ 40mVrms 1000X: ≤ 350mVrms | | Full Bandwidth: 100X: ≤ 86mVrms 1000X: ≤ 205mVrms | | Full Bandwidth: 100X: ≤ 86mVrms 1000X: ≤ 205mVrms | |
| CMRR | DC : >-80dB 100kHz: >-60dB 10MHz: >-30dB 100MHz: >-26dB | | DC : >-80dB 100kHz: >-60dB 10MHz: >-30dB 100MHz: >-26dB | | DC : >-80dB 100kHz: >-60dB 10MHz: >-30dB 100MHz: >-26dB | | DC : >-80dB 100kHz: >-60dB 10MHz: >-30dB 100MHz: >-26dB | | DC : >-80dB 100kHz: >-60dB 10MHz: >-30dB 100MHz: >-26dB | |
| Delay time | 11.99ns(20X) 12.27ns(200X) | | 11.99ns(50X) 12.27ns(500X) | | 11.99ns(100X) 12.27ns(1000X) | | 11.2ns(100X) 10.65ns(1000X) | | 11.2ns(100X) 10.65ns(1000X) | |
| Input impedance | 16MΩ/1.5pF(differential) 8MΩ/3pF(each input to ground) | | 16 MΩ/1.5pF(differential) 8MΩ/3pF(each input to ground) | | 20MΩ/1.5 pF(differential) 10MΩ/3pF(each input to ground) | | 60MΩ / 0.78pF(differential) 30MΩ / 1.6pF(each input to ground) | | 60MΩ / 0.78pF(differential) 30MΩ / 1.6pF(each input to ground) | |
| Output voltage | ≤ 3.5V | | ≤ 3V | | ≤ 3V | | ≤ 7V | | ≤ 7V | |
| Output impedance | 1MΩ | | 1MΩ | | 1MΩ | | 1MΩ | | 1MΩ | |
| Power supply | DC 5V | | DC 5V | | DC 5V | | DC 5V | | DC 5V | |
| Overrange | LED flashes, Buzzer beeps | | LED flashes, Buzzer beeps | | LED flashes, Buzzer beeps | | LED flashes, Buzzer beeps | | LED flashes, Buzzer beeps | |
| Dimensions | Control module: L*W*H: 91 *33 *15 /mm Signal box: L*W*H: 100 * 36 * 20 /mm | | Control module: L*W*H: 91 *33 *15 /mm Signal box: L*W*H: 100 * 36 * 20 /mm | | Control module: L*W*H: 91 *33 *15 /mm Signal box: L*W*H: 100 * 36 * 20 /mm | | Control module: L*W*H: 91 *33 *15 /mm Signal box: L*W*H: 100 * 36 * 20 /mm | | Control module: L*W*H: 91 *33 *15 /mm Signal box: L*W*H: 100 * 36 * 20 /mm | |
| Cable length | Approx. 8 cm (Input); Approx. 120cm (Output) | | Approx. 8 cm (Input); Approx. 120cm (Output) | | Approx. 8 cm (Input); Approx. 120cm (Output) | | Approx. 8 cm (Input); Approx. 120cm (Output) | | Approx. 8 cm (Input); Approx. 120cm (Output) | |
| Temperature | Operating: 0°C ~ 40 °C Non-operating: -30 °C ~ 70 °C | | Operating: 0°C ~ 40 °C Non-operating: -30 °C ~ 70 °C | | Operating: 0°C ~ 40 °C Non-operating: -30 °C ~ 70 °C | | Operating: 0°C ~ 40 °C Non-operating: -30 °C ~ 70 °C | | Operating: 0°C ~ 40 °C Non-operating: -30 °C ~ 70 °C | |
| Humidity | Operating: 5 ~ 85% RH (0°C ~ 40 °C) Non-operating: 5% ~ 85% RH (≤ 40 °C) ; 5% ~ 45% RH (40 °C ~70 °C) | | Operating: 5 ~ 85% RH (0°C ~ 40 °C) Non-operating: 5% ~ 85% RH (≤ 40 °C) ; 5% ~ 45% RH (40 °C ~70 °C) | | Operating: 5 ~ 85% RH (0°C ~ 40 °C) Non-operating: 5% ~ 85% RH (≤ 40 °C) ; 5% ~ 45% RH (40 °C ~70 °C) | | Operating: 5 ~ 85% RH (0°C ~ 40 °C) Non-operating: 5% ~ 85% RH (≤ 40 °C) ; 5% ~ 45% RH (40 °C ~70 °C) | | Operating: 5 ~ 85% RH (0°C ~ 40 °C) Non-operating: 5% ~ 85% RH (≤ 40 °C) ; 5% ~ 45% RH (40 °C ~70 °C) | |

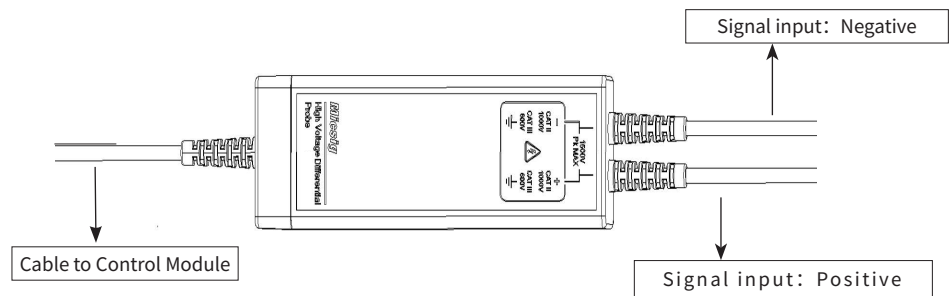
3. Appearance

DP differential probe mainly consists of control module and signal box.

Control Module



Signal Box



4. Precautions

- 1) The bandwidth of the oscilloscope should be no less than the bandwidth of the probe, channel input impedance should be 1MΩ.
- 2) Calibrate the probe before use:
Short-circuit the input ends, power on, press “Zero” button, 5MHz LED light flashes, after hearing a “Di” sound, means calibration succeeded; if hearing “Di Di Di” sound, means calibration failed, needs to be calibrated again;
- 3) Recommend to use after 10 mins warm-up to get more accurate result.
- 4) When Range LED indicator flashes and beeps rapidly, indicating Overvoltage warning, please switch to higher range.