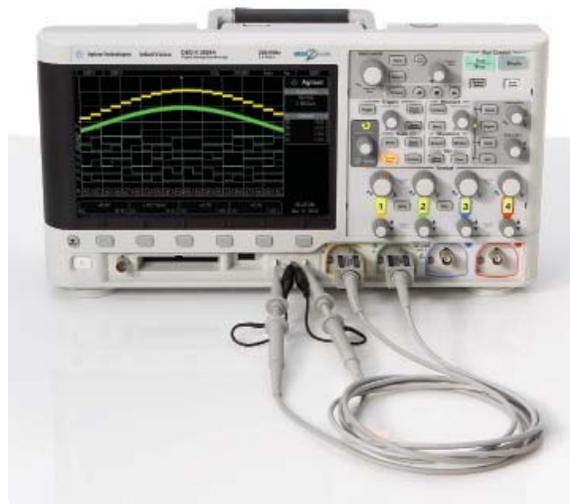


N2862B/N2863B/N2889A/N2890A Passive Probes

Data Sheet



The Agilent N2862B, N2863B, N2889A and N2890A low-cost, general-purpose passive probes provide up to 500 MHz bandwidth and feature a high input resistance of 10 M Ω for low probe loading. These probes provide a 10:1 attenuation ratio except for the N2889A which provides a switch in the probe handle for switching the attenuation ratio between 1:1 and 10:1.

The probes are compatible with Agilent InfiniiVision and Infiniium Series oscilloscopes with 1 M Ω input.

Characteristics

| Probe characteristics | N2862B | N2863B | N2889A | N2890A |
|---|---|---------------|---|---|
| Bandwidth (-3 dB) | 150 MHz | 300 MHz | 350MHz (@10:1), 10MHz (@1:1) | 500 MHz |
| Rise time (10% - 90%) | 2.33 nsec | 1.16 nsec | 1 nsec (@10:1), 35 nsec (@1:1) | 700 psec |
| Attenuation ratio | 10:1 | 10:1 | 1:1/10:1 (switchable) | 10:1 |
| Input resistance (when terminated into 1 M Ω) | 10 M Ω | 10 M Ω | 10 M Ω (@10:1), 1 M Ω (@1:1) | 10 M Ω |
| Maximum input voltage | 300 V RMS (or >400Vpk) CAT I and CAT II | | 300 VRMS (or >400Vpk) CAT I/II (@10:1), 150 V RMS CAT I/II (@1:1) | 300 V RMS (or >400Vpk) CAT I and CAT II |
| Scope compensation range | 5-30 pF | 5-30 pF | 5-30 pF (@10:1) | 5-30 pF |
| Probe ID | Yes | Yes | No | Yes |
| Cable length | 1.2 m | 1.2 m | 1.3 m | 1.3 m |
| Safety | Conformance to IEC-61010-031:2002 | | | |
| Operating Temperature | 0 to 50 °C, 80% RH | | | |
| Storage Temperature | 0 to 50 °C, 80% RH | | | |



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Compensation Adjustments

These probes can be adjusted for low-frequency and high-frequency compensation. For the best measurement results you should compensate your probe to match its characteristics to the oscilloscope. A poorly compensated probe can introduce measurement errors. Low-frequency compensation should be performed before performing high-frequency compensation.

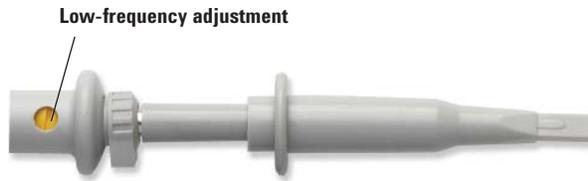


Figure 1. Low-frequency compensation adjustment.

Low-frequency compensation

1. Connect the probe from the appropriate oscilloscope channel to the 1-kHz square wave source.
2. Press Autoscale. Adjust the oscilloscope to display two to three cycles of the waveform over two to six vertical divisions.
3. Set the low-frequency compensation adjustment on the probe for the flattest pulse possible (see Figure 2).

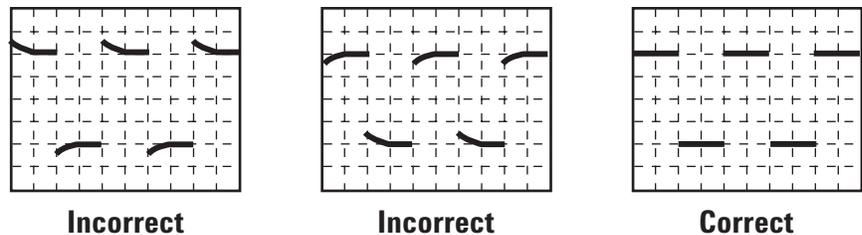


Figure 2.

High-frequency compensation

1. Using the BNC adapter, connect the probe to a square wave generator operating between 10-kHz and 1-MHz, and terminated into 50-Ω.
2. Press Autoscale. Adjust the oscilloscope to display one cycle of the waveform over two to six vertical divisions.
3. Set the high-frequency compensation adjustment on the probe for the flattest, most square, and most horizontal pulse possible (see Figure 4).

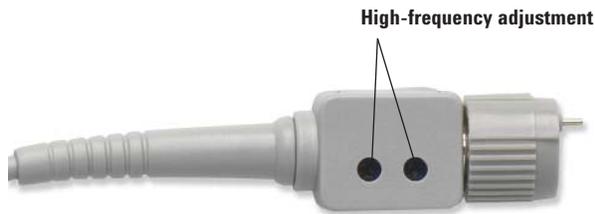


Figure 3. High-frequency compensation adjustment.

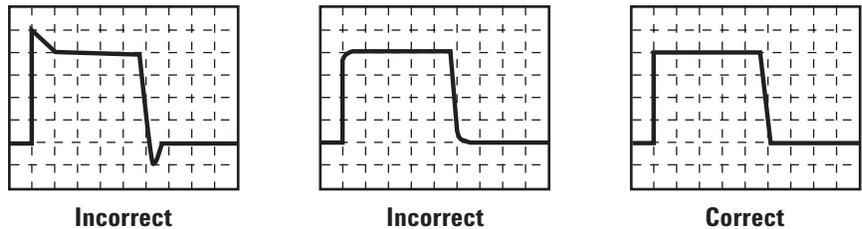


Figure 4.

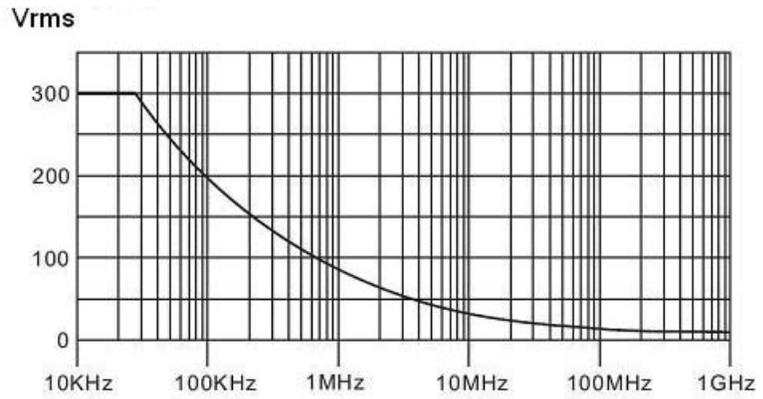


Figure 5. N2862B/63B/89A/90A voltage derating curve



Standard Accessories

| Item | Description | Quantity |
|------|---|--|
| 1 | Retractable hook | 1 |
| 2 | Adjustment tools | 2 (with N2889A/90A) 1 (with N2862B/63B) |
| 3 | Insulating cap | 1 |
| 4 | IC insulating cap | 1 |
| 5 | Identification tags (green,yellow, purple and pink) | 2 each |
| 6 | Probe tip | 2 |
| 7 | Ground spring | 1 |
| 8 | BNC adapter | 1 |
| 9 | Ground lead (black 12 cm) | 1 |

Replacement accessories

- 0960-2900 Retractable hook tips
- 0960-2922 PCB socket adapter
- 0960-2923 Dual-lead adapter



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