FOR Model HVP –18HF HVP-28HF HVP-39PRO

Compensation Adjustment — Detailed Instructions

1. Using a 200 Hz Signal for Compensation

When performing compensation adjustment, use a low-frequency sqaure wave signal (e.g., 200 Hz) with moderate amplitude.
We recommend using a function generator outputting **20 Vp-p** to ensure the oscilloscope and voltage probe can capture a stable waveform for fine-tuning.

A low-frequency signal such as 200 Hz is chosen because it provides stable observation of phase and amplitude errors and is less affected by high-frequency noise or non-uniform probe frequency response.

Apply the 200 Hz signal to the probe input (high-voltage or calibration terminal) and observe the waveform at the output (connected to the oscilloscope) to adjust the amplitude and phase compensation accordingly.

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2. Using Hole 3 and Bandwidth Adjustment Procedure

Hole 3 is used for **high-frequency fine-tuning** when additional compensation is required beyond the standard adjustment.

When to Use Hole 3
Hole 3 is typically used under high-frequency test conditions or when the probe still shows amplitude deviation or excessive phase error in the mid- to high-frequency range after normal compensation.
Switching to Hole 3 allows fine adjustment of the probe's high-frequency response.

Recommended Bandwidth Adjustment Steps

1. **Initial Compensation (Hole 1)**
   Use a **200 Hz** Square Wave Signal /**20 Vp-p** for basic compensation (as described above).
   Adjust the compensation capacitor to minimize waveform distortion at low frequency, ensuring a clean, undistorted wave.
2. **Intermediate-Frequency Check (Hole 2)**

Apply a **200 kHz Square Wave S**ignal/**20 Vp-p** to check the amplitude ratio and phase difference between input and output.

Verify that deviations remain within acceptable limits.

3. **High-Frequency Adjustment (Hole 3)**

   As specified in the manual, use a **1 MHz square wave (or higher)** /**20 Vp-p** for adjustment.

   Switch to the circuit corresponding to Hole 3 and fine-tune the compensation components until the high-frequency response becomes stable and accurate.

4. **Repeated Fine-Tuning**

   With Hole 3 active, iteratively adjust the corresponding compensation components until the amplitude and phase errors at high frequency are reduced to acceptable levels.

5. **Full-Frequency Verification**

   Finally, verify the probe's response across multiple frequencies (e.g., **200 Hz, 1 kHz, 100 kHz, 1 MHz**) to confirm that the compensated output is flat and free from significant deviation across the full bandwidth.

Note: only can adjust by below accessory attached with shipment.

適用型號: HVP –18HF HVP-28HF HVP-39PRO

補償調整 — 詳細操作說明

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1. 使用 200 Hz 訊號進行補償調整

在進行補償調整時，請使用低頻方波訊號（例如 200 Hz）且具適中振幅。
建議使用訊號產生器輸出 **20 Vp-p** 的方波，以確保示波器與電壓探棒能捕捉到穩定的波形，方便進行微調。

之所以選用 200 Hz 等低頻訊號，是因為它能穩定觀察相位與振幅誤差，且不易受到高頻雜訊或探棒頻率響應不均的影響。

將 200 Hz 訊號輸入至探棒輸入端（高壓端或校正端），並在輸出端（連接示波器的部分）觀察波形，以據此調整振幅與相位補償。

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2. 使用第 3 孔（Hole 3）與頻寬調整流程

Hole 3 用於高頻微調，當標準補償後仍需進一步修正時使用。

何時使用 Hole 3

當在高頻測試條件下，或完成一般補償後，探棒仍顯示中高頻範圍的振幅偏差或明顯相位誤差時，
可切換至 **Hole 3** 所對應的電路進行高頻響應微調。

建議的頻寬調整步驟

1. **初始補償（Hole 1）**
   使用 **200 Hz 方波訊號 / 20 Vp-p** 進行基礎補償（如前述）。
   調整補償電容，使低頻波形失真最小，確保波形乾淨、無明顯畸變。
2. **中頻檢查（Hole 2）**
   施加 **200 kHz 方波訊號 / 20 Vp-p**，檢查輸入與輸出間的振幅比與相位差。
   確認偏差維持在可接受範圍內。

3. **高頻調整（Hole 3）**

   依照說明書規範，使用 **1 MHz 方波（或更高頻率）/ 20 Vp-p** 進行調整。

   切換至 **Hole 3** 所對應電路，微調補償元件，直到高頻響應穩定且準確為止。

4. **重複微調**

   在 **Hole 3** 模式下，可反覆微調相關補償元件，直到高頻振幅與相位誤差降低至可接受範圍。

5. **全頻段驗證**

   最後，於多個頻率（如 **200 Hz、1 kHz、100 kHz、1 MHz**）下驗證探棒響應，

   確認補償後的輸出在全頻帶內平坦且無明顯偏差。

注意: 僅可使用以下附件進行調整。