HP 5381A FREQUENCY COUNTER

OPERATING AND SERVICE MANUAL
1-7. SPECIFICATIONS

Specifications are covered by a manual change sheet included with the manual. Any lower serial prefixes are documented in Section 17 of this manual. There are differences between the manual and your unit. Please refer to the serial number on your instrument. The serial number is the first five digits of the serial number (000000000000000000).

1-5. INSTRUMENT IDENTIFICATION

This feature also allows true measurements to be made by the counter. Refer to Table 1-1 for all counter specifications.

1-3. INSTRUMENT DESCRIPTION

This section of the manual gives a description of the instrument identification information and complete specifications.

1-2. GENERAL INFORMATION

SECTION 1

(General Information)
### OPTION 001 TXO

**Dimensions:** 89 mm H x 160 mm W x 58 mm D (3.5 in. x 6.3 in. x 2.3 in.)

**Weight:** Net 1.7 lb (0.8 kg) Supplied: 6.5 lb (2.9 kg)

**Power Requirements:** 100, 120, 220, 240 VAC (45 Hz to 450 Hz ±5% to ±10% 30 VA max.)

**Operating Temperature:** 0°C to 40°C

### Accessories Available:

- ACO: 1 MHz Crystal
- BCO: 10 MHz Reference

### External Input

- Minimum input: ≥ 5 V rms to 7 MHz
- Sensitivity: ≤ 2.5 V rms
- Frequency Range: 10 kHz to 2 MHz

### Internal Time Base

- 1 Hz at 1 second rate
- 1 Hz at 1 second rate

### Calibration Time

- Manual: 1 second, 1 second, 10 seconds
- Accuracy: ±1 count ± Time Base Accuracy

### Maximum Input Levels:

- 125mV peak to peak
- 500 mV peak to peak
- 200 V peak to peak

### General Information

Model 2881A
2-1. **Line Voltage Selector Settings**

The desired operating voltage (see Figure 2-1). VOLTAGE SELECTOR switches with the markings on the rear panel that correspond to 120 VAC or 240 VAC operation. If an other supply voltage is to be used, change the rear panel settings as follows:

2-2. **Line Voltage Selection**

- Maximum temperature: +100°F (+37°C)
- Minimum temperature: -40°F (-40°C)
- Maximum altitude: 5000 ft.

2-3. **Environmental Conditions**

Conditions during storage and shipment should normally be limited as follows:

2-4. ** Packaging**

To protect valuable electronic equipment during storage or shipment, a shock-proof package is advisable. The best packaging method is the use of shock-proof padding material, foam, or plywood. When loading into the box, refer to the packing instructions and select the proper size to protect the equipment.

2-5. **Storage and Shipment**

Carefully pack the carton to be sent.

2-6. **Unpacking and Inspection**

Check that all components are present and undamaged.
2-17. Obtaining Noise Rejection

The ATTENTIONOR should be set to "X100". A measured signal may have a large harmonic content or noise from other sources. The

2-18. Ratio Measurements

By following formula:

\[ R = \frac{\text{Input Ratio}}{\text{Input Ratio}} \times \frac{\text{Display Value}}{\text{Display Value}} \]

2-19. Cable and Termination Requirements

To minimize distortions due to noise, shielded cables should be used to make measurements.
Figure 2-3: Front Panel Operating Controls, Connectors, and Indicators

1. Display: Seven digits of LED (light-emitting diode) display are provided on the front panel. A decimal point illuminates in the position according to the setting of the DEC point illuminations in the upper front. This permits correct indication of the counter output in decimal form.

2. LINE switch: The power LINE switch is a push-on, push-off type, in the down position.

3. GATE TIME switch: GATE TIME switch is used to select the measurement time. It will take 1 second to make a measurement. When the GATE TIME switch is set to 1/10 second, the following sequence will be displayed in the upper portion: Manual. At the conclusion of the counter period, a carriage return occurs. The measurement time will be displayed in the lower portion of the display. 

4. ATTENUATION switch: The three-position attenuation switch provides for attenuation of input signals. The switch is set to the X100 position to examine the range of input signals. The attenuation is used to extend the range of input signals by factors of 10 and 100. The input signal is not attenuated when the switch is set to the X1 position. After reducing the attenuation, if necessary, until a stable display is observed.

5. Input Impedance is 1 MOhm.

6. INPUT connector: Connect the signal to be measured to the BNC-type INPUT jack.

RESULT

CAUTION

BE SURE THAT THE MAXIMUM ALLOWABLE INPUT VOLTAGES ARE NOT EXCEEDED. THE COUNTER MAY OTHERWISE DAMAGE THE COUNTER.

AS GIVEN IN TABLE 1-1, SPECIFICATIONS ARE NOT EXCEEDED.
Option 001 instrument. Option 001 is located inside the instrument.

1. Power connector. Connect the source of ac power to the rear-panel power connector.

2. Press a lighted 0.750 ampere slow-blow fuse in place for 100 volt or 120 volt operation.

3. EXTL/INT switch. Set the EXTL/INT switch to EXTL. See Table 1.1 for OSCI. Exchanger signal requirements. Time base monitor output from connector when OSCI in connector and set the OSCILATOR-EXTL switch to EXTL. See Table 1.1 for OSCI. Exchanger output. Insert internal oscilloscope. Connect the signal to the OSCILATOR-EXTL connector. An external oscillator can be used in place of the OSCILATOR-EXTL connector.

4. OSCILATOR-EXTL switch at INT.

5. Insert an internal oscilloscope. Connect the signal to the OSCILATOR-EXTL switch. See Table 1.1 for OSCI. Exchanger output.

3. OSCILATOR-EXTL switch at INT.

2. Press a lighted 0.750 ampere slow-blow fuse in place for 100 volt or 120 volt operation.

1. Power connector. Connect the source of ac power to the rear-panel power connector.