

accuracy. There are two oven options to choose from, one with an accuracy of  $\pm 1 \times 10^7$ , and one with an accuracy of  $\pm 3 \times 10^8$  over the  $0^\circ\text{C}$  to  $40^\circ\text{C}$  temperature range.

### Simple, Hands-Off Operation

All counter/timer models (7250A, 7260A, 7261A) feature AUTO ranging resolution. Simply select the desired measurement function, set the resolution switch to AUTO range, and the instrument will automatically choose the correct range for best resolution, position the decimal point properly, and light an annunciator LED indicating the units of measurement.

### 7220 Communications Counter

The 7220A gives you 10 Hz to 1300 MHz coverage via two separate channels. Channel A is for low-frequency applications (10 Hz to 125 MHz), where the loading of the signal source and the effects of high frequency noise must be minimized. Channel B has a 50 ohm input and is for signals from 100 MHz to 1300 MHz.

An ac-coupled, 1 megohm input and versatile front-end controls for Channel A let you measure signals having extremely high noise levels and still produce stable, accurate readings. A continuously variable  $\times 1$  to  $\times 10$  wideband attenuator plus switchable  $1\times$  or  $10\times$  attenuation lets you minimize noise without losing the signal. And a switchable 100 kHz low-pass filter solves the problem of high frequency contamination of audio frequencies. Used together, the attenuator and filter can solve most noise problems.

The resolution multiplier (Option -351) increases measurement resolution by a factor of 1000 for frequencies from 10 Hz to 10 kHz with out requiring any more measurement time. Resolution goes from 0.001 Hz for 10 Hz signals to 0.1 Hz for 10 kHz signals.

### 7250A Universal Counter/Timer

The 7250A measures frequencies to 80 MHz, time intervals down to 100 ns, and periods down to 100 ns with 1 ps resolution (in the average mode). In addition, it will measure the ratio of two signal frequencies, counts per minute, or totalize events to 9,999,999 counts.

A broadband, continuously variable,  $\times 100$ , analog attenuator lets you add just enough attenuation to minimize the input signal noise level and optimize the signal amplitude for counting. A switchable 100 kHz, lowpass filter solves the problem of high frequency contamination of audio signals. You can use the filter and attenuator separately or in combination to solve tough noise problems, like calibrating audio oscillators near high power rf transmitters. For timing measurements, there are  $\pm$ slope controls, fixed-offset trigger level switches, and a separate/common switch at your fingertips.

## 7200 Series Counters

Frequency measurement to 1300 MHz

Single-shot time intervals to 10 ns

Autoranging resolution for simple operation

100 kHz low-pass filter

Fully EMI shielded

Ovenized accuracy with battery portability

The 7200 Series consists of four counters, capable of measuring frequencies up to 1300 MHz, packaged in the versatile Portable Test Instrument case.

The 7220A Communications Counter provides frequency measurements to 1300 MHz. The 7250A Universal Counter/Timer is the lowest priced member of the family, and offers frequency, period, time interval, and totalizing measurements up to 80 MHz. The 7260A offers these same features, plus trigger hold-off and an optional Channel C for frequency measurements to 1300 MHz. The top-of-the-line 7261A adds increased resolution through a 100 MHz timebase, and offers a phase modulated time base to ensure valid time interval averaging of clock-synchronous signals.

### The PTI Concept

The Fluke-developed Portable Test Instrument (PTI) packaging concept allows you to easily configure low-cost, convenient mini-test systems using the Fluke 1120A IEEE-488 Translator. A number of compatible Fluke instruments can be interfaced using the 1120A, including counters and voltmeters. With the 1120A, any PTI instru-

ment cluster may be operated in a GPIB/IEEE-488\* system. The unique stack-and-latch design makes them easy to carry; requires less rack space, too.

### Low Susceptibility, Minimal rf Radiation

A lightweight, interval stainless steel shield completely surrounds the instruments and mates with the metal front and rear panels to provide an rf enclosure meeting most requirements of MIL-STD-461. This means low susceptibility in high rf environments, as well as minimal radiated energy to interfere with nearby rf-sensitive equipment.

### Portable Counters With Ovenized Accuracy

For applications demanding the best possible accuracy, ovenized timebase oscillators are available. These oscillators consume such low power they can be used when the counters are operating from batteries. When you go out on a field assignment you can switch to battery power and keep the oscillator warm and standing by for instantaneous use with laboratory stability and

\*The terms GPIB and IEEE-488 may be used interchangeably throughout this catalog.

# Benchtop Timer/Counters

## 7200 Series

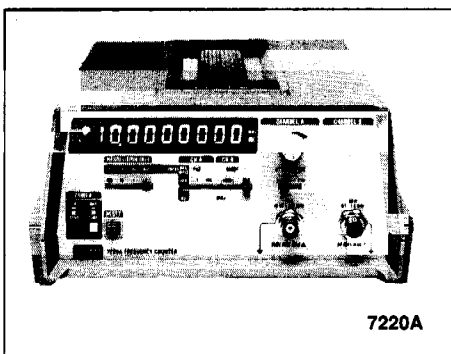
### 7260A & 7261A Universal Counter/Timers

The 7260A and 7261A will measure frequencies to 125 MHz, or (optionally) to 520 MHz or 1300 MHz, with a 50Ω channel (Channel C).

The instruments are essentially alike except the 7261A has a 100 MHz clock, with a corresponding basic resolution of 10 ns, and the 7260A has a 10 MHz clock, with 100 ns resolution. Both counters will make time-interval or signal-period measurement and will average from  $10^0$  to  $10^5$  such measurements per reading when greater resolution or accuracy is desired. That extends the resolution of the 7261A to 31.6 ps for time-interval measurements or to 0.1 ps for period measurements. In addition, the 7261A is available with a unique phase-modulated time-base option to assure averaging out small consistent errors.

A broadband attenuator lets you select 1x, 10x or 100x attenuation to minimize interference from signal noise and to trigger near the peak of high amplitude signals. And a switchable 100 kHz low-pass filter solves the problem of high frequency contamination of audio frequency signals. The signal may be dc coupled or ac coupled and either + or - slope of the sign may be selected for triggering. The Channel A and Channel B trigger level controls have a zero-volt preset position for easy triggering on sinewaves and other signals that cross the zero-volt level.

Trigger status lights tell when triggering is unstable, and the precise trigger level setting of both channels may be monitored at a rear panel connector. Also at the rear panel is a marker output — a gate signal that brackets each period or time-interval measurement. The marker is for use with an oscilloscope. The trigger level and marker outputs are for making accurate timing measurements such as the rise time and fall time of complex signals. A time interval hold-off control with a 1000:1 ratio (20 μs to 20 ms) delays the end of the marker gate to measure the precise portion of a signal.



### 7220A Specifications

#### Frequency Measurements

**Channel A Range:** 10 Hz to 125 MHz

**Channel B Range:** 100 MHz to 1300 MHz  
**Resolution:** 0.1 Hz to 100 kHz in decade steps  
**Accuracy:**  $\pm 1$  count  $\pm$  time base error\*  
**Display:** MHz  
**Burst Mode:** Minimum burst equals gate time +40 ms

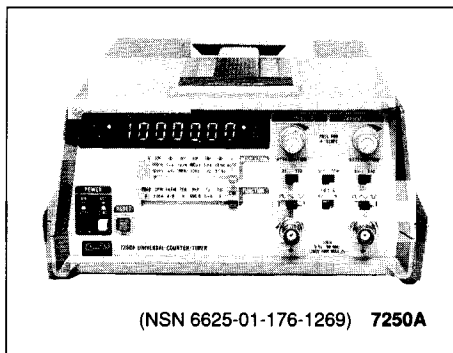
\*See Time Base Characteristics chart

#### Channel A Input Characteristics

**Bandwidth:** 10 Hz to 125 MHz, ac-coupled  
**Sensitivity:** 10 mV rms, 10 Hz to 50 MHz; 15 mV rms, 50 MHz to 100 MHz; 25 mV rms, 100 MHz to 125 MHz  
**Impedance:** 1 MΩ, <60 pF  
**Filter:** 100 kHz, low pass  
**Attenuator:** x1 to x100; x1 or x10 fixed, plus x1 to x10 continuously variable  
**Maximum Input:** 250V rms from 10 Hz to 5 kHz decreasing linearly from 250V rms at 5 kHz to 5V rms at 2 MHz; 5V rms from 2 MHz to 125 MHz

#### Channel B Input Characteristics

**Bandwidth:** 100 MHz to 1300 MHz  
**Sensitivity:** 5 mV rms, 100 MHz to 600 MHz; 10 mV rms, 600 MHz to 1000 MHz; 40 mV rms, 1000 MHz to 1300 MHz  
**Impedance:** 50Ω  
**VSWR:** 2.5:1, maximum  
**Maximum Input:** 5V rms



### 7250A Specifications

#### Frequency Measurements (CH A)

**Range:** 5 Hz to 80 MHz, ac coupled  
**Resolution:** 0.1 Hz to 10 kHz, in decade steps  
**Accuracy:**  $\pm 1$  count  $\pm$  time base error\*

\*See Time Base Characteristics chart

#### Period Measurements (CH A)

**Range:** 100 ns to 99,999.99 seconds  
**Frequency Range:** 5 Hz to 1 MHz  
**Resolution:** 10 ms to 100 ns in decade steps  
**Accuracy:**  $\pm 1$  count  $\pm$  time base error  $\pm$  trigger error  
**Display:** ms, or sec with decimal

#### Period-Average Measurements (CH A)

**Range:** 1 ps to 999,999.9 μs  
**Frequency Range:** 5 Hz to 1 MHz, sinewave  
**Resolution:** 100 ns to 1 ps in decade steps  
**Accuracy:**  $\pm 100$  ns +  $N^*$   $\pm$  time base error  $\pm$  trigger error  $\pm N^*$   
**Display:** μs or ms with decimal

\* $N = 10^0$  to  $10^5$  in decade steps set by resolution switch. Indicates the number of periods averaged in period average mode, the number of intervals averaged in time interval average mode, or the number of cycles of B averaged in ratio mode.

#### Time-Interval Measurements (CH A/B)

**Range:** 100 ns to 99,999.99 sec  
**Frequency Range:** 5 Hz to 1 MHz  
**Resolution:** 100 ns to 10 ms in decade steps  
**Accuracy:**  $\pm 1$  count  $\pm$  time base error  $\pm$  trigger error  
**Display:** ms or sec with decimal

#### Totalize

**Range:** 5 Hz to 80 MHz for channel A  
**Count Capacity:** 9,999,999  
**Display:** Digits only, no decimal or annunciator

#### Ratio Measurements

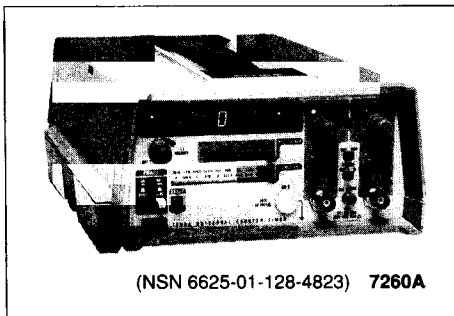
**Range:** 5 Hz to 80 MHz for channel A, 5 Hz to 1 MHz for channel B  
**Resolution:**  $\pm$  frequency of B + ( $N^*$  x frequency of A)  
**Accuracy:**  $\pm$ Resolution  $\pm$ (frequency of B x trigger error of B +  $N^*$ )  
**Display:** Digits with decimal, no annunciator

#### Counts Per Minute (cpm x 200,\* CH A)

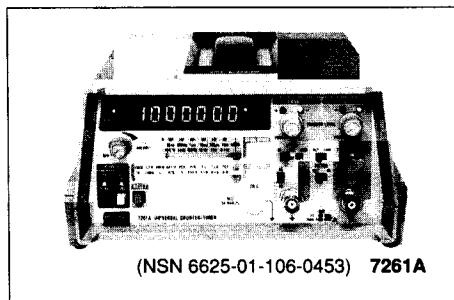
**Range:** 5 Hz to 80 MHz  
**Count Time:** 600 ms (1/100 minute)  
**Resolution:** 100 cpm, fixed  
**Accuracy:**  $\pm 1$  count  $\pm$  time base error  
**Display:** Digits only, no decimal or annunciator  
\*Reads RPM direct of 100-tooth wheel/sensor

#### Channel A & B Input Characteristics

**Selection:** Separate or A connected to B (Sep/Com)  
**Sensitivity:** 10 mV rms 5 Hz to 50 MHz; 25 mV rms 50 MHz to 80 MHz  
**Impedance:** 1 MΩ, 50 pF, nominal  
**Coupling:** AC only  
**Attenuator:** x1, x100, continuously variable  
**Filter:** Low pass, 100 kHz 3 dB point, nominal  
**Trigger Level:** +150 mV, 0V, or -150 mV, 0V or -150 mV, switch-selectable  
**Maximum Input:** 100V rms 5 Hz to 45 Hz; 250V rms 45 Hz to 50 kHz decreasing to 5V rms at 1 MHz to 80 MHz



(NSN 6625-01-128-4823) 7260A



(NSN 6625-01-106-0453) 7261A

### 7260A & 7261A Specifications

#### Technical Specifications

##### Frequency Measurements (Channel A)

**Range:** 0 Hz to 125 MHz  
**Resolution:** 0.1 Hz to 10 kHz, in decade steps  
**Accuracy:**  $\pm 1$  count  $\pm$  time base error\*  
**Display:** kHz or MHz with decimal  
 \*See Time Base Characteristics chart

##### Frequency Measurements, Channel C Option (-310 or -331)

**Range:** 50 MHz to 520 MHz (Option -310); 100 MHz to 1300 MHz (Option -331)  
**Resolution:** 0.1 Hz to 10 kHz, in decade steps  
**Accuracy:**  $\pm 1$  count  $\pm$  time base error\*  
**Display:** kHz or MHz with decimal  
 \*See Time Base Characteristics chart

##### Ratio Measurements (A/B)

**Range:** 0 Hz to 125 MHz for channel A, 0 Hz to 2 MHz for channel B  
**Resolution:**  $\pm$  frequency of B  $\div$  N\* x frequency of A  
**Accuracy:** Resolution  $\pm$  frequency of B x trigger error of B  $\div$  N\*  
**Display:** Decimal, no annunciator

##### Period Measurements (Channel A)

**Range:** 100 ns to 999,999.99 seconds for 7260A, or 10 ns to 99,999.999 seconds for 7261A

**Frequency Range:** 0 Hz to 2 MHz, sinewave  
**Pulse Width:**  $\geq 500$  ns from 0 Hz to 100 kHz;  $\geq 250$  ns from 100 kHz to 2 MHz  
**Resolution:** 10 ms to 100 ns in decade steps for 7260A, or 1 ms to 10 ns in decade steps for 7261A  
**Accuracy:**  $\pm 1$  count  $\pm$  time base error  $\pm$  trigger error  
**Display:** ms, or sec with decimal for 7260A,  $\mu$ s, ms, or sec with decimal for 7261A

##### Period-Averaged Measurements (CH A)

**Range:** 1 ps to 9,999,999.9  $\mu$ s for 7260A; 0.1 ps to 999,999.99  $\mu$ s for 7261A  
**Frequency Range:** 0 Hz to 2 MHz, sinewave  
**Pulse Width:**  $\geq 500$  ns from 0 Hz to 100 kHz;  $\geq 250$  ns from 100 kHz to 2 MHz  
**Resolution:** 100 ns to 1 ps in decade steps for 7260A; 10 ns to 0.1 ps in decade steps for 7261A  
**Accuracy:** 100 ns  $\div$  N\*  $\pm$  timebase error  $\pm$  trigger error  $\div$  N\* for 7260A, or 10 ns  $\div$  N\*  $\pm$  timebase error  $\pm$  trigger error  $\div$  N\* for 7261A  
**Display:**  $\mu$ s or ms with decimal

\*N =  $10^0$  to  $10^5$  in decade steps set by resolution switch. Indicates the number of periods averaged in period average mode, the number of intervals averaged in time interval average mode, or the number of cycles averaged in ratio mode.

##### Time-Interval Measurements (CH A/CH B)

**Range:** 100 ns to 999,999.99 sec, for 7260A, or 10 ns to 99,999.999 sec 7261A  
**Frequency Range:** 0 Hz to 5 MHz, sinewave  
**Pulse Width:** 250 ns, for 7260A, 210 ns for 7261A  
**Resolution:** 100 ns to 10 ms in decade steps for 7260A, 10 ns to 1 ms in decade steps for 7261A  
**Accuracy:**  $\pm 1$  count  $\pm$  time base error  $\pm$  trigger error  
**Display:** ms or sec 7260A;  $\mu$ s, ms, sec 7261A  
**Time Interval Holdoff:** 20  $\mu$ s to 20 ms, continuously variable

##### Time-Interval-Averaged Measurements (CH A/CH B)

**Range:** 1 ns to 9,999,999.9  $\mu$ s for 7260A, or 0.1 ns to 999,999.99  $\mu$ s for 7261A  
**Frequency Range:** 0 Hz to 5 MHz, sinewave  
**Pulse Width:** 250 ns for 7260A, 210 ns for 7261A  
**Resolution:** 100 ns  $\div$   $\sqrt{N}$ \* for 7260A, 10 ns  $\div$   $\sqrt{N}$ \* for 7261  
**Accuracy:** 100 ns  $\div$   $\sqrt{N}$ \*  $\pm 10$  ns  $\pm$  time base error  $\pm$  trigger error  $\div$   $\sqrt{N}$ \* for 7260A; 10 ns  $\div$   $\sqrt{N}$ \*  $\pm$  time base error  $\pm$  trigger error  $\div$   $\sqrt{N}$ \* for 7261A  
**Dead Time:** 4  $\mu$ s  
**Display:**  $\mu$ s or ms with decimal

\*N =  $10^0$  to  $10^5$  in decade steps set by resolution switch. Indicates the number of periods averaged in period average mode, the number of intervals averaged in time interval average mode, or the number of cycles of B averaged in ratio mode.

##### Totalize (CH A Gated by CH B)

**Range:** 0 Hz to 125 MHz for channel A, 0 Hz to 2 MHz for channel B  
**Count Capacity:** 99,999,999  
**Display:** Total count, no decimal or annunciator  
**Time Interval Holdoff:** Range, 20  $\mu$ s-20 ms, continuously variable

##### Counts Per Minute (cpm x100, CH A)

**Range:** 0 Hz to 125 MHz  
**Count Time:** 600 ms (1/100 minute)  
**Resolution:** 100 cpm, fixed  
**Accuracy:**  $\pm 1$  count  $\pm$  time base error  
**Display:** No decimal or annunciator

##### Channel A & B Input Characteristics

**Bandwidth:** 0-125 MHz, dc coupled; 5 Hz-125 MHz, ac coupled  
**Selection:** Separate or A connected to B (Sep/Com)  
**Sensitivity:** 10 mV rms, 0 to 50 MHz; 25 mV rms, 50 to 100 MHz; 40 mV rms, 100-125 MHz  
**Minimum Pulse:** 50 ns at 50 mV pk (7260A); 10 ns at 50 mV pk (7261A)  
**Impedance:** 1 M $\Omega$ , 50 pF, nominal  
**Coupling:** AC or dc  
**Attenuator:** x1, x10, x100, switchable  
**Slope:** < or —, switchable  
**Filter:** Low pass, 100 kHz 3 dB point, nominal  
**Trigger Level Range:** +1.5V to -1.5V  
**Linear Operating Range:** +2.5V to -2.5V  
**Maximum Input:** 100V rms 0 Hz to 45 Hz, 250V rms 45 Hz to 50 kHz decreasing to 5V rms at 1 MHz, 5V rms 1 MHz to 125 MHz

##### Channel C Input Characteristics Option (-310 or -331)

**Bandwidth:** 50 MHz to 520 MHz (Option -310); 100 MHz to 1300 MHz (Option -331)  
**Sensitivity:** 10 mV rms (Option -310); 5 mV rms to 600 MHz, 10 mV rms from 600 MHz to 1000 MHz, 40 mV rms from 1000 MHz to 1300 MHz (Option -331)  
**Impedance:** 50 $\Omega$ , 2.5: 1 VSWR, maximum  
**Maximum Input:** 5V rms, fused

##### Triggering

**Trigger Level Output:**  $\pm 1.5$ V level indicates dc trigger level set on either Channel A or B, switch-selectable  
**Trigger Status Indicators:** Two per channel provide positive indication that the input signal is triggering the input amplifier and relative indication as to where on the signal the input amplifier is being triggered  
**Cont/Trig Mode:** Rear panel switch activates external trigger mode for initiating a measurement

# Benchtop Timer/Counters

## 7200 Series

### Option Specifications

#### Battery Pack Option (-010)

**Type:** Nickel-Cadmium, size F  
**Operating Time (Typical):** 7220A, 5.5 hours; 7250A, 3.5 hours; 7260A, 2.8 hours; 7261A, 2 hours

**Charge Time:** 16 hours at room temperature  
**Charge Protection:** Thermistor-actuated shut down of charging circuit if battery temperature exceeds 65°C

**Discharge Protection:** Automatic low-voltage shutdown to prevent over discharge

#### Time Base Phase Modulation Option (-190) 7261A only

**Description:** Option insures valid time interval averaging of clock-synchronous signals by phase modulating internal time base

#### 520 MHz Channel C Option (-310) (7260A, 7261A)

**Range:** 50 MHz to 520 MHz

**Sensitivity:** 10 mV rms

**Input Impedance:** 50Ω

**VSWR:** 2.5:1, maximum

#### 1300 MHz Channel C Option (-331) (7260A, 7261A)

**Range:** 100 MHz to 1300 MHz

**Triggered Mode:** Handles bursts as short as 3.6 ms

**Sensitivity:** 5 mV rms to 600 MHz, 10 mV rms from 600 MHz to 1000 MHz, 40 mV rms above 1000 MHz

**Input Impedance:** 50Ω

**VSWR:** 2.5:1, maximum

**Maximum Input:** 5V rms, fuse protected

#### Resolution Multiplier Option (-351) (7220A only)

**Description:** Frequency-locked loop circuit designed to increase low frequency resolution 1000 times

**Range:** 10 Hz to 10 kHz

**Lock Time:** 1.5 seconds

**Resolution:** 0.0001 Hz to 0.1 Hz in decade steps

**Accuracy:** ±2 counts ± time base accuracy\*

\*See time base characteristics for time base accuracy

#### Data Output Option (-521)

**Type:** Serial BCD output of all digits and measurement units

**Levels:** TTL, "1" state low

### Time Base Characteristics

Characteristics	Option			
	Standard	-112 TCXO	-131 Oven	-132 Oven
Frequency	10 MHz	10 MHz	10 MHz	10 MHz
Aging Rate (Const Temperature)	±5x10 <sup>-7</sup> /mo	±3x10 <sup>-7</sup> /mo ±1x10 <sup>-6</sup> /yr	±1x10 <sup>-7</sup> /mo*	±5x10 <sup>-8</sup> /mo* ±3x10 <sup>-9</sup> /day*
Temperature Accuracy (0°C to 40°C)	<5x10 <sup>-6</sup> **	±2x10 <sup>-6</sup>	±1x10 <sup>-7</sup>	±3x10 <sup>-8</sup>
Line Variation (±10% change)	±1x10 <sup>-7</sup>	±2x10 <sup>-8</sup>	±2x10 <sup>-8</sup>	±4x10 <sup>-9</sup>
Battery Operation	±1x10 <sup>-7</sup>	±2x10 <sup>-8</sup>	±5x10 <sup>-8</sup>	±1x10 <sup>-8</sup>
Warm-up***				
10 Minutes	—	—	±5x10 <sup>-7</sup>	±5x10 <sup>-7</sup>
20 Minutes	—	—	±3x10 <sup>-8</sup>	±3x10 <sup>-8</sup>

\* After five days of continuous operation

\*\* Peak-to-peak variation over temperature range

\*\*\* Compared to frequency 24 hours after turn on

(1) Time base error is the sum of all errors specified for the particular time base (see time base specifications)

(2) Trigger error is the measurement error caused by noise on the input signal triggering the input amplifier too early or too late, calculated as follows:

$$\text{Microseconds of trigger error} = \frac{2 \times \text{pk noise voltage (V)}}{\text{signal slope at trigger point (V/}\mu\text{s)}}$$

or Trigger error ±0.3% of one period divided by number of periods averaged for signals with better than 40 dB signal to noise ratio and 100 mV rms amplitude, whichever is greater.

#### Personality Card Option (-522K)

For 1120A IEEE-488 Translator. Part of Option -529

#### IEEE-488 Interface Option (-529)

**Description:** Interfaces to IEEE-488 via the Fluke 1120A IEEE-488 Translator. (Note: 1120A must be purchased separately.) Provides full measurement output capability as well as remote selection of all functions and ranges.

**Repertoire:** SH1, AH1, T5, L4, SR1, RL2, DC1, DT1

### General Specifications

#### External Time Base Input

**Frequency:** 10 MHz, ac coupled

**Sensitivity:** 300 mV rms

**Impedance:** 1 kΩ, 30 pF, nominal

**Maximum Input:** 3V rms

**Display:** LED with leading zero suppression, decimal, and annunciators. 9-digits (7220A), 8-digits (7260A, 7261A), 7-digits (7250A)

**Cycle Rate:** Fixed 250 ms between readings

**Reset:** Reset button clears display, lights all display segments and, on release, activates a new measurement

**Self Check:** Counts and displays 10 MHz clock

**Temperature:** 0°C to 40°C, operating; -40°C to +70°C, non-operating

**EMI:** Internal metal RFI shield meets most requirements of MIL-STD-461, Notice 3

**Safety:** Designed to meet requirements of UL 1244 and IEC 348

**Power:** 100V, 120V, 220V or 240V ac ±10%, 47 to 63 Hz, 32 VA max

**Size:** 32.7 cm L x 20.3 cm W x 10.8 cm H (12.9 in L x 8.0 in W x 4.3 in H)

**Weight:** 3 kg (6.5 lb), 7250A, 7260A, 7261A; 3.2 kg (7 lb), 7220A

**Included with instrument:** Instruction manual, power cord, serialized and dated calibration certificate

## Ordering Information

### Models

January 1991 prices

7220A Communications Counter .....	\$ 1750
7250A Universal Counter/Timer .....	1660
7260A Universal Counter/Timer .....	1815
7261A Universal Counter/Timer .....	2100

### Options

All options may be ordered with all models, except as indicated.

-010* Rechargeable Battery Pack .....	\$ 520
-111* 1 ppm TCXO (7220A) .....	230
-112* 2 ppm TCXO (7250A, 7260A, 7261A) .....	300
-131* Low Power Oven .....	490
-132* Superior Low Power Oven .....	630
-190** Time Base Phase Modulation (7261A) .....	225
-310* 520 MHz Channel C (7260A, 7261A) .....	465
-331*** 1300 MHz Channel C (7260A, 7261A) .....	825
-351* Resolution Multiplier (7220A) .....	125
-521* Interface w/PTI Cable .....	250
-522K Personality Card for 1120A .....	505
-529 <sup>1</sup> IEEE-488 Interface .....	465

\*Factory or Service Center installation only.

\*\*Factory installation only.

\*\*\*Not compatible with Option -010. Also factory option only.

<sup>1</sup>The -529 Option can be ordered and installed at time of manufacture only. Includes parts needed to interface the 7260A or 7261A to IEEE-488 via the Fluke 1120A IEEE-488 Translator. Includes -521, -522K, and Y7203 2 ft ribbon cable. For existing instruments which do not have the -529 Option installed, an IEEE interface can be added by ordering -521 and -522K Options (1120A also required).

### Accessories (Also see Section 18)

<b>1120A</b> IEEE-488 Translator .....	\$ 640
<b>A53</b> Whip Antenna .....	45
<b>Y7201</b> Attenuator/Filter .....	95
<b>Y9111</b> Coaxial Cable, 50Ω, BNC to BNC 3 ft (0.93m) .....	25
<b>Y9112</b> Coaxial Cable, 50Ω, BNC to BNC 6 ft (1.85m) .....	25
<b>Y9103</b> 50Ω BNC Feed-thru Termination	40
<b>Y2014</b> 5 <sup>1</sup> / <sub>4</sub> " Rack Panel PTI, Single .....	95
<b>Y2015</b> 5 <sup>1</sup> / <sub>4</sub> " Rack Panel PTI, Double .....	95
<b>Y2020</b> DIN Panel Mount PTI .....	95
<b>Y7203</b> PTI Ribbon Cable, 2 ft .....	55
<b>Y7204</b> PTI Ribbon Cable, 5 ft .....	70
<b>Manuals</b>	
<b>7220A</b> Instruction* (PN 487488) .....	\$ 37
<b>7250A</b> Instruction* (PN 487496) .....	37
<b>7260A</b> Instruction* (PN 487504) .....	37
<b>7261A</b> Instruction* (PN 487512) .....	37

\*No charge with purchase of unit

### Customer Support Service

#### Warranty

One-year product warranty. See Section 17 for further information on warranty terms and conditions.

#### Extended Warranty

A 10% discount is available when you order the following at the time of the instrument purchase or when ordered within the factory warranty period.

<b>SC1-7220A</b> Repair .....	\$ 90
<b>SC2-7220A</b> Calibration .....	45
<b>SC3-7220A</b> Full Service .....	125
<b>SC4-7220A</b> Performance Verification-Plus	27
<b>SC1-7250A</b> Repair .....	95
<b>SC2-7250A</b> Calibration .....	45
<b>SC3-7250A</b> Full Service .....	130
<b>SC4-7250A</b> Performance Verification-Plus	27

<b>SC1-7260A</b> Repair .....	\$ 114
<b>SC2-7260A</b> Calibration .....	63
<b>SC3-7260A</b> Full Service .....	164
<b>SC4-7260A</b> Performance Verification-Plus	38
<b>SC1-7261A</b> Repair .....	138
<b>SC2-7261A</b> Calibration .....	63
<b>SC3-7261A</b> Full Service .....	186
<b>SC4-7261A</b> Performance Verification-Plus	38

*Note: Incoming and/or outgoing calibration readings are available as an option.*

#### Spare Parts

Recommended spare parts kits are available. Contact Replacement Parts Dept. at (800) 526-4731 in most of U.S.A., (206) 356-5774 from WA, for more details.