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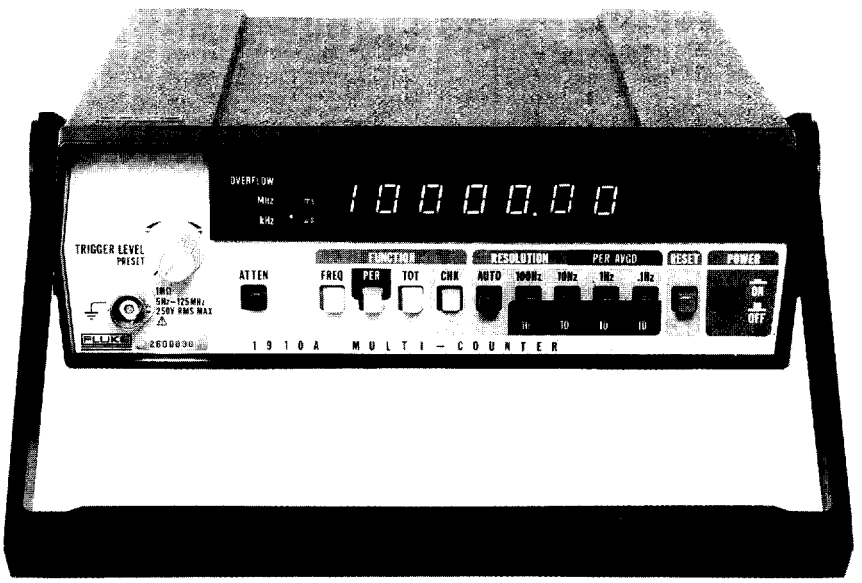
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Multifunction Counters

1910A, 1911A & 1912A

Available through Distributors



(NSN 6625-01-092-8438) **1910A**

1910A, 1911A & 1912A Multifunction Counters

Frequency, period, period averaging and totalize measurements

Autoreset

Instant warning when input signal falls below sensitivity threshold (1911A & 1912A)

Rechargeable battery pack version

These rugged counters are at home on the production line, in the lab, or in the field and do the work of counters costing much more. They measure frequencies to 125 MHz, 250 MHz or 520 MHz (depending on model), period of signals to 2 MHz, period average to 10 ps resolution and totalize to 9,999,999 counts.

Autorange

Full autoranging is supplemented by selectable four-range manual operation. In autorange, the display is automatically filled to a maximum 7-digit readout. A unique hysteresis capability eliminates undesirable up-and-down ranging for between-range signals.

Autoreset

This automatic feature is activated every time you select a new range or function, which means you never have to wait for a second reading, the first one in the new measurement sequence is always correct. Autoreset saves time and reduces errors.

Automatic Clean Dropout

The 1911A and 1912A Channel B input has a circuit which automatically monitors the input and gives you instant warning in the form of zero readout whenever your input signal falls below the sensitivity threshold of the trigger circuit. When the signal level returns to an acceptable level, the counter locks on for a correct reading.

Sensitivity

A basic sensitivity of 15 mV, backed by Fluke's conservative design margin, guarantees you will get reliable, solid readings every time. In practice, a typical sensitivity of 10 mV will be experienced.

Versatile Time Bases

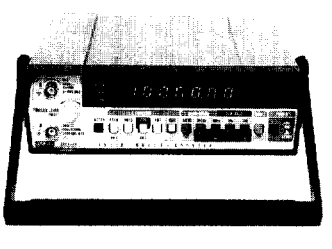
The standard 0.5 ppm per month timebase assures excellent long term stability for bench, production or field use. A convenient rear panel external timebase input jack and switch let you operate from your own 10 MHz frequency standard at any time. Choice of optional time bases with improved aging rates and temperature stabilities allows you to purchase only as much stability as you'll need in your applications.

Input Signal Conditioning

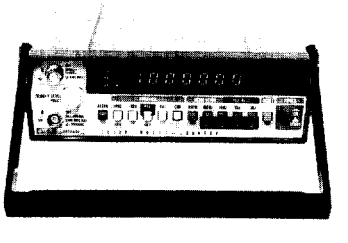
Each counter offers trigger level and attenuator controls which operate over the dynamic range of the input to permit accurate readings in the presence of noise. Even ringing TTL signals can be accurately measured. In addition, the 1911A offers a separate 50 ohm input for 50 MHz to 250 MHz and the 1912A does the same but goes to 520 MHz.

Battery Portability

All three counters are available with rechargeable batteries for field portability. Order 1910A -01, 1911A-01, or 1912-01. Four hours minimum operation gives you plenty of opportunity to solve those tough field service problems.



(NSN 6625-01-064-3855) **1911A**



1912A

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Specifications

Model	Channel	Operating Range		Sensitivity	Input Impedance	Overload (Max Input Voltage)	Prescale Factor
		Frequency	Period				
1910A	**A**	5 Hz - 125 MHz	500 ns - 0.2s (5 Hz - 2 MHz)	15 mV rms, 5 Hz - 100 MHz 25 mV rms, 100 MHz - 125 MHz	1 MΩ/30 pF ac coupled	dc + ac; <360V pk; 250V rms, 5 Hz - 1 kHz 10V rms above 1 kHz	–
1911A	**A**	5 Hz - 125 MHz	500 ns - 0.2s (5 Hz - 2 MHz)	15 mV rms, 5 Hz - 100 MHz 25 mV rms, 100 MHz - 125 MHz	1 MΩ/30 pF ac coupled	dc + ac;<360V pk; 250V rms, 5 Hz - 1kHz 10V rms above 1 kHz	–
	B	50 MHz - 250 MHz	–	15 mV rms, 50 MHz - 175 MHz 30 mV rms, 175 MHz - 250 MHz	50Ω, VSWR <2.5:1	dc + ac: <100V pk; 5V rms, fuse protected	2
1912A	**A**	5 Hz - 125 MHz	500 ns - 0.2s (5 Hz - 2 MHz)	15 mV rms, 5 Hz - 100 MHz 25 mV rms, 100 MHz - 125 MHz	1 MΩ/30 pF ac coupled	dc + ac; <360 V pk; 250V rms, 5 Hz - 1 kHz 10V rms above 1 kHz	–
	B	50 MHz - 520 MHz	–	25 mV rms, 50 MHz - 520 MHz	50Ω, VSWR <2.5:1	dc + ac: <100V pk; 5V rms, fuse protected	4

Technical Specifications

Ch A Attenuator: x1, x10 (approx)
Ch A Trigger Level: ±0.5V range
Ch A Totalize: 1 to 9,999,999 counts
Frequency Accuracy: Time base accuracy ±1 count
Period Accuracy: Frequency accuracy plus trigger error*

** Trigger error is less than 0.3% of one period ÷ periods averaged for sinewaves of 40 dB signal-to-noise ratio or better and amplitude equal to sensitivity of counter*

Frequency Resolution: 0.1 Hz, 1 Hz, 10 Hz, 100 Hz, manually selected. Autorange automatically seeks to fill 7 digits but will not select gate time <1 second
Period Resolution: 100 ns, 10^0 single period; 10 ns, 10^1 period averaged; 1 ns, 10^2 periods averaged; 100 ps, 10^3 periods averaged. Auto range automatically seeks to fill 7 digits; if input frequency is high enough, may select 10^4 periods averaged (10 ps resolution) but will not select measurement time <1 second

Option Specifications

TCXO Options (-03, -04)

Time Base Selection Guide

Type (10 MHz)	Aging Rate	Line Variation (±10%)	Temperature Accuracy 0-50°C
Standard	±5 x 10^{-7}/mo	±1 x 10^{-7}	±5 x 10^{-6}*
Option -03	±3 x 10^{-7}/mo	±2 x 10^{-8}	±2 x 10^{-6}*
Option -04	±3 x 10^{-7}/mo	±2 x 10^{-8}	±5 x 10^{-7}*

**p-p variation*

Y7201 Attenuator/Filter

The Y7201 is a combination variable attenuator and selectable low pass filter which can be used for input signal conditioning on all counters. Typical specifications are:
Input Impedance: 47 kΩ
Attenuation Range: x5 to x100, continuously adjustable
Low Pass Filter: 1 kHz, 20 kHz or 100 kHz, switch-selectable
Maximum Input: 30V ac

General Specifications

Display: 7-digit LED, leading zeros suppressed
Annunciation: MHz, kHz, msec, +sec, overflow
Operating Temperature: 0°C to 50°C (line models). 0°C to 40°C (battery models) when operating and charging
Storage Temperature: -40°C to +70°C (line models), -40°C to +60°C (battery models)
External Timebase Input
Frequency: 10 MHz to 300 kHz (typical)
Amplitude: 300 mV rms, 5V p-p max
Input Impedance: <1 kΩ
Power, Line Models: 100, 115, or 230V ac ±10%, 48 Hz to 440 Hz, 8W maximum
Power, Battery Models
100V ±10%, 48 Hz to 52 Hz, 8.5W max
100V ±10%, 58 Hz to 62 Hz, 8.5W max
115V ±10%, 58 Hz to 62 Hz, 8.5W max
230V ±10%, 48 Hz to 52 Hz, 8.5W max

Note: Voltage and frequency must be specified at time of order

Time (between successive measurements): 200 ms plus measurement time
Size: 6.4 cm H x 21.7 cm W x 27.1 cm D (2.52 in H x 8.55 in W x 10.65 in D)
Weight: 1.5 kg (3.2 lb) max, for line models, 2.2 kg (4.8 lb) max for battery models
Safety: Factory Mutual 3820 approved, CSA 556B certified

Included with Instrument: Instruction manual, power cord. Order Y9111 or Y9112 coaxial cable(s) and Y9103 50Ω Terminator separately

Ordering Information

Models

January 1990 prices

1910A Multifunction Counter (125 MHz) $ 755
1910A-01 w/Rechargeable Battery 930
1911A Multifunction Counter (250 MHz) 925
1911A-01 w/Rechargeable Battery 1075
1912A Multifunction Counter (520 MHz) 1025
1912A-01 w/Rechargeable Battery 1155

Specify line voltage and frequency if other than 60 Hz and 115V ac

Options

19XXA-03* 2 ppm TCXO ..... $ 245
19XXA-04* 0.5 ppm TCXO 305

**Factory installation only*

Accessories (Also see Section 17)

A53 Whip Antenna ..... $ 30
Y7201 Attenuator/Low Pass Filter 65
Y9111 Coaxial Cable, 50Ω BNC to BNC, 3 ft (0.93m) 20
Y9103 50Ω BNC Feed-thru Terminator . 35
C86 Carrying Case, Molded Plastic 20
Y8205 Soft Carrying Case w/shoulder strap 35
M00-200-611 3½" Rack Mount, Offset .. 50
M00-200-612 3½" Rack Mount, Center . 50
M00-200-613 3½" Rack Mount, Dual 60

Customer Support Services

Warranty
One-year product warranty. See Section 16 for further information on warranty terms and conditions.

Available through Distributors. See Section 18 for listing.

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