Fluke 123/124 specification

Fluke 123/124
Users Manual

Dual Input Oscilloscope

Vertical

Frequency Response

DC Coupled:
excluding probes and test leads (via BB120):
Fluke 123: DC to 20 MHz (-3 dB)
Fluke 124: DC to 40 MHz (-3 dB)
with STL120 1:1 shielded test leads:
DC to 12.5 MHz (-3 dB)
DC to 20 MHz (-6 dB)
with VP40 10:1 probe:
Fluke 123 (optional accessory): DC to 20 MHz (-3 dB)
Fluke 124 (standard accessory): DC to 40 MHz (-3 dB)

AC Coupled (LF roll off):
excluding probes and test leads: <10 Hz (-3 dB)
with STL120: <10 Hz (-3dB)
with 10 MΩ 10:1 Probe: <1 Hz (-3 dB)

Rise Time

excluding probes, test leads (Fluke 123): <17.5 ns
excluding probes, test leads (Fluke 124): <8.75 ns

Input Impedance
excluding probes and test leads: 1 MΩ//12 pF
with BB120: 1 MΩ//20 pF
with STL120: 1 MΩ//225 pF
with VP40 10:1 Probe: 5 MΩ//15.5 pF

Sensitivity: 5 mV to 500 V/div

Display Modes: A, -A, B, -B

⚠Max. Input Voltage A and B
direct, with test leads, or with VP40 Probe: 600 Vrms
with BB120: 300 Vrms
(For detailed specifications, see "Safety", Figs. 4-1/4-2)

⚠Max. Floating Voltage
from any terminal to ground: 600 Vrms
up to 400 Hz

Resolution: 8 bit

Vertical Accuracy: ±(1% + 0.05 range/div)

Max. Vertical Move: ±4 divisions

Horizontal

Scope Modes: Normal, Single, Roll

Ranges
Normal:
equivalent sampling (Fluke 123): 20 ns to 500 ns/div
equivalent sampling (Fluke 124): 10 ns to 500 ns/div
real time sampling: 1 µs to 5 s/div
Single (real time): 1 µs to 5 s/div
Roll (real time): 1s to 60 s/div

Sampling Rate (for both channels simultaneously)
Equivalent sampling (repetitive signals):
up to 1.25 GS/s
Real time sampling:
1 µs to 5 ms/div: 25 MS/s
10 ms to 60 s/div: 5 MS/s

Time Base Accuracy
Equivalent sampling: ±(0.4% +0.04 time/div)
Real time sampling: ±(0.1% +0.04 time/div)

Glitch Detection: ≥40 ns @ 20 ns to 5 ms/div
≥200 ns @ 10 ms to 60 s/div
Glitch detection is always active.

Horizontal Move: 10 divisions
Trigger point can be positioned anywhere across the screen.

Trigger

Screen Update: Free Run, On Trigger

Source: A, B, EXT
EXTernal via optically isolated trigger probe ITP120 *(optional accessory)*

Sensitivity A and B (Fluke 123)
@ DC to 5 MHz: 0.5 divisions or 5 mV
@ 25 MHz: 1.5 divisions
@ 40 MHz: 4 divisions

Sensitivity A and B (Fluke 124)
@ DC to 5 MHz: 0.5 divisions or 5 mV
@ 40 MHz: 1.5 divisions
@ 60 MHz: 4 divisions

Slope: Positive, Negative

Video on A: interlaced video signals only
Modes: Lines, Line Select
Standards: PAL, NTSC, PAL+, SECAM
Polarity: Positive, Negative
Sensitivity: 0.6 divisions sync.

Advanced Scope Functions

Display Modes
Normal: Captures up to 40 ns glitches and displays analog-like persistence waveform.
Smooth: Suppresses noise from a waveform.
Envelope: Records and displays the minimum and maximum of waveforms over time.

Auto Set
Continuous fully automatic adjustment of amplitude, time base, trigger levels, trigger gap, and hold-off. Manual override by user adjustment of amplitude, time base, or trigger level.