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.