Fluke ScopeMeter® 125 Series Oscilloscope with Industrial Network Testing

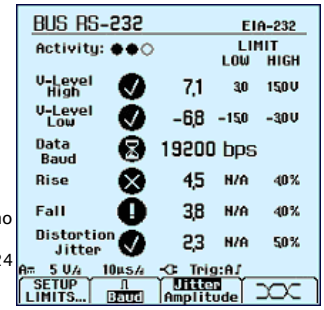
ScopeMeter ® 125: All the power of the 120-Series plus Industrial Bus Health Test capabilities and advanced power measurements on top

The compact ScopeMeter 120 Series is the rugged solution for industrial troubleshooting and installation applications. Based on the Fluke 120 series, the 125 has all the capabilities of the 124 ScopeMeter extended with the capability to measure and analyze the signal quality on the common industrial buses.

For more details on the Industrial Bus Test capabilities of the 125, scroll through this section. For the more generic ScopeMeter capabilities, see the ScopeMeter 120 Series section.

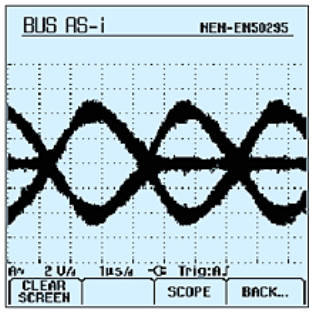
Additional features of the Fluke 125

The Fluke 125 is based on the Fluke 124 and includes all the functions and capabilities of that instrument. On top, a Bus Health Test mode allows for an analysis of the signal quality on industrial buses and networks, comparing measured signals to the standards' signal requirements.



This section presents the Bus Health Test capabilities of the 125 specifically. For the general test capabilities, see the Fluke 124 pages – click here.

Fluke 125 is the ScopeMeter of choice for the maintenance engineer who deals with industrial machinery and the industrial network connecting his machinery the like. The Fluke 125 has all the functionality of the 124 plus it comes with the following extensions:



- Bus Health mode gives a clear "Good" / "Weak" / "Bad" indication for the electrical signals on industrial buses and networks, such as CAN-bus, Profi-bus, RS-232 and many more. The Fluke 125 validates the quality of the electrical signals as soon as any electrical signals are passed along the network. It checks the signal levels and speed, transition times and distortion, and compares these to the appropriate standards to help you find errors like improper cable connections and terminators. It helps you find the source of error in case communication comes to a halt. All the commonly found industrial network types are supported!

The 125 also offers advanced power measurements for single phase and balanced 3-phase systems, a Harmonics Mode and more.

Specifications	
Bandwidth	40 MHz
Sample Rate:	2.5 GS/s repetitive sampling 25 MS/s single shot sampling

Bus Health Test functions	
Bus Health test:	Verifies the electrical parameters of industrial bus systems using automatic measurement and analysis functions. Next to that, an Eyepattern mode is provided for visual inspection of signal quality.
Parameter classification:	Default values: • well within limits = 'good' • within certain percentage of the limit values = 'weak' • beyond limit values = 'bad' Limits values, as a default, are based on industry standard for the selected bus type or may be set by the user.
Bus systems supported:	• AS-i (EN50295, 166 kb/s); • CAN-bus (ISO-11898, up to 1 Mb/s); • Interbus S (EIA-485, 500 kb/s); • ControlNet (61158 type 2, 5Mb/s); • Modbus (EIA-232 up to 115 kb/s and EIA-485 up to 10 Mb/s); • Foundation Fieldbus H1 (61158 type 1, 31.25 kb/s); • Profibus DP (EIA-485 up to 10 Mb/s); • Profibus PA (61158 type 1, 31.25 kb/s); • Ethernet 10Base2 (coaxial); • Ethernet 10BaseT (UTP, 10 Mb/s); • RS-232 (EIA-232, up to 115 kb/s); • RS-485 (EIA-485, up to 10 Mb/s); • user defined single wire or balanced system.
Modes:	Waveform Parameter analysis with automatic read-out and parameter • validation (good / weak / bad); test limits are based on industry standards or may be set by the user. • Eyepattern display mode.
Measured parameters (where applicable):	• baud rate, • risetime, • fall time, • high level, • low level, • bias voltage level, • signal amplitude, • distortion, • jitter.
Eyepattern display mode:	Gives waveform display of bus signals with display persistence. Timebase and attenuator settings may be altered by the user.

Additional Power measurement capabilities (Fluke 125 only)	
Measurement types:	• Watt, • VA, • VAR, • Power Factor (PF)
Power configuration:	Single phase or balanced three-phase (delta-configuration) mains supply
Voltage measurement	Channel A; using STL120, voltage probe or direct input
Current measurement	Channel B, using i400s (included) or other compatible current clamp
Current Clamp or Shunt sensitivity:	0.1 / 1 / 10 / 100 / 1000 mV/A, 10 mV/mA and 400 mV/A.

Harmonics Mode (Fluke 125 only)	
	Converts waveform information into a harmonics display (using FFT processing) which shows the relative amplitudes of the 1st up to the 33rd harmonic
Analyzed waveform:	Voltage waveform(Ch.A), Current wavefrom (Ch.B) or Power (Ch.A x Ch.B), automatically generated.
Harmonics Frequency range:	DC up to 33rd harmonic (for fundamental up to 60 Hz); DC up to 24th harmonic (for fundamental up to 400 Hz).
Display	Bargraph showing 1st up to 33rd harmonic and DC; amplitude displayed in % relative to fundamental
Measurements:	Relative amplitude of individual harmonics; THD in %r or %f.