

Fluke 125 Industrial ScopeMeter, additional information

Features and Benefits

The Fluke 125 = Fluke 124 plus:

<i>Feature</i>	<i>Description</i>	<i>Benefit</i>
Industrial Network “Bus Health Test” for the following bus systems: <ul style="list-style-type: none"> ▪ CAN-bus, ▪ Foundation Fieldbus, ▪ Profibus, ▪ Industrial Ethernet (both Coax and Twisted Pair), ▪ AS-I bus, ▪ Interbus S (RS-485), ▪ Mod-bus (RS-232, RS-485), ▪ RS-232, ▪ RS-485, ▪ ControlNet, ▪ User defined system 	Continuous acquisition of signal with a high/low level and edge speed indicator. Display gives waveforms in an ‘eye pattern’ mode and the instrument automatically calculates data transmission speed and gives ‘good’ or ‘bad’ indications for a range of parameters: <ul style="list-style-type: none"> ▪ rise- and fall-time ▪ amplitude ▪ bias level ▪ pulse width ▪ distortion 	Allows the SIM engineer to check signal quality on industrial networks. Supports fault-find at the hardware level in bus systems. Allows for faults like missing links, incorrect line loading, line interrupts, short circuit conditions, reflections and the like to be identified.
Harmonics Analysis up to the 33 rd Harmonic		Allows for fault-finding in electrical systems, e.g. due to flat-topping as seen with non-linear loads like SMPS-es. Supports wider frequency range than Power Quality testers, yet doesn’t stick to the PQ-protocols (which give definitions only for 50 and 60 Hertz systems).
Power measurements	Watt, VA, VAR and Power Factor	Allows for power to measured over a wide frequency range, e.g. at the output of motor drives and frequency converters. <i>Note: not tested versus PQ-standards; the 125 is not a PQ-analyzer.</i>
50 Ohms range	With 50.00Ω full scale readout and a resolution of 0.01Ω	Allows fault finding in motor windings and making comparisons between ‘known good’ and ‘suspected’ systems.

V_{pwm} Effective voltage of Drive output.	Measure the true effective output voltage 'as the motor perceives it' on variable speed motor drives	Allows for true effective output voltage measurement on motor drives.
User named setups	With readable names (plain text names)	Brings better ease of use to the 125, allowing the user to give plain text identifiers to test-data when stored. All four cursor keys are used for selecting the character position and the character to be inserted, which is working really very conveniently.

The new Fluke 125 adds a number of additional test capabilities to extend the working area of the Fluke 120 Series and is based on the Fluke 124. On top, the 125 offers:

❖ **Bus Health mode**

Industrial Buses (so called 'Field Buses') link the machinery on the factory floor to each other, to sensors, actuators and to a central computer and control system.

The Fluke 125 now offers extensive capabilities to test the proper functioning of the network by analyzing the electrical signals on the network (see screen copy).

Supported Fieldbus types are:

- AS-i bus,
- CAN-bus
- Interbus
- ControlNet
- MOD-Bus
- Foundation Fieldbus
- Profibus
- Ethernet (coax and TP, 10 Mb/s)
- RS-232
- RS-485
- plus a capacity to define two 'user defined' network type.

BUS RS-232		EIA-232	
Activity: ●●○		LIMIT	
		LOW	HIGH
U-Level High	✓	7,1	30 150V
U-Level Low	✓	-6,8	-150 -30V
Data Baud	⌚	19200 bps	
Rise	✗	4,5	N/A 40%
Fall	!	3,8	N/A 40%
Distortion Jitter	✓	2,3	N/A 50%

Am: 5 V_u 10 μs_u -C Trig:AJ

SETUP LIMITS... Baud Jitter Amplitude

Example of Bus Health screen

Note: the Bus Health function is not a protocol analyzer but is a tool to investigate the electrical layer of the communications system, giving 'good' or 'no good' indicators for individual parameters of the electrical system.

❖ **Power Measurements for single phase and balanced 3-phase systems:**

- Watts
- VA
- VAR
- Power Factor (PF)

❖ **Harmonics mode, up to 33rd harmonic**

(see screen copy). This mode supports a wide range of fundamental mains frequencies including 16.⅔, 50, 60 and 400 Hz systems!

❖ **High resolution, low impedance measurements**

50.00 Ω full scale, for use on motor windings and other low resistance wiring.

❖ **Reading of Hz and Rotations Per Minute (RPM) for use with electrical and combustion engines.**

Input signal can be:

- 2 rotations per 1 pulse
- 1 rotation per 1 pulse
- 1 rotation per 2 pulses
- 1 rotation per 4 pulses

❖ **Measurement of V_{pwm} for use on motor drive outputs,**
as was implemented on the 190-series before

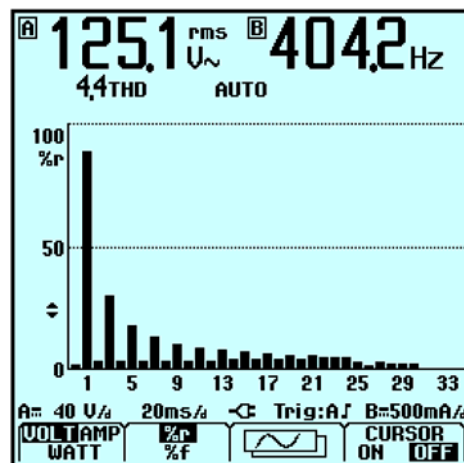
❖ **'Save and recall' using a user-defined name**

for the stored data set. Each data set (up 9 pieces) contains screen + set-up + data. Names can be created freely and altered at a later stage.

❖ **Fluke i400s Current Clamp included as a standard** (Fluke 125 only). Furthermore, the i5s current clamp is supported by the 125 firmware.

Note: The full level of functionality of the Fluke 124 is included in the 125.

Also all accessories found with the 124 are included. On top, an i400s current clamp is included with the Fluke 125.



Example of Harmonics mode screen

FlukeView

With the introduction of the Fluke-125, a new edition of FlukeView ScopeMeter is introduced to support this new model: FlukeView ScopeMeter SW90W **V4.4**. The functionality level in conjunction with the 120-series is no different from V4.3 and V4.2, though.

Shipments of the Fluke-125/S and of the SCC120 will include the V4.4 per the release of the Fluke-125. For customers who have release V4.x, a free update will be available through the Fluke public website, later on this month.

The Fluke 120 Series ScopeMeters just got better, giving more measurement power into the hands of the demanding Service, Maintenance and Installation Engineer.