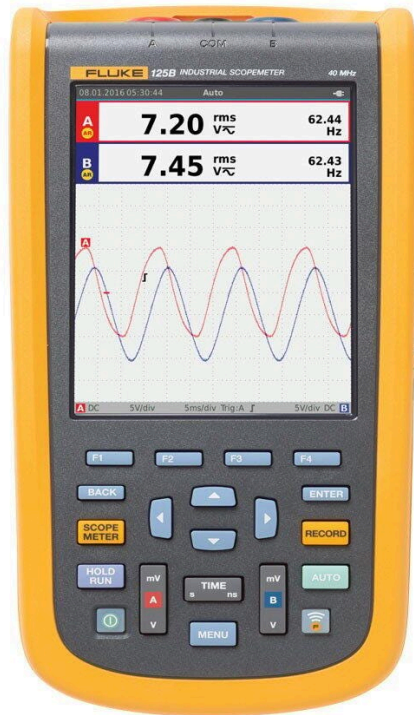


## TECHNICAL DATA

# Fluke 120B Series Industrial ScopeMeter® handheld Oscilloscopes



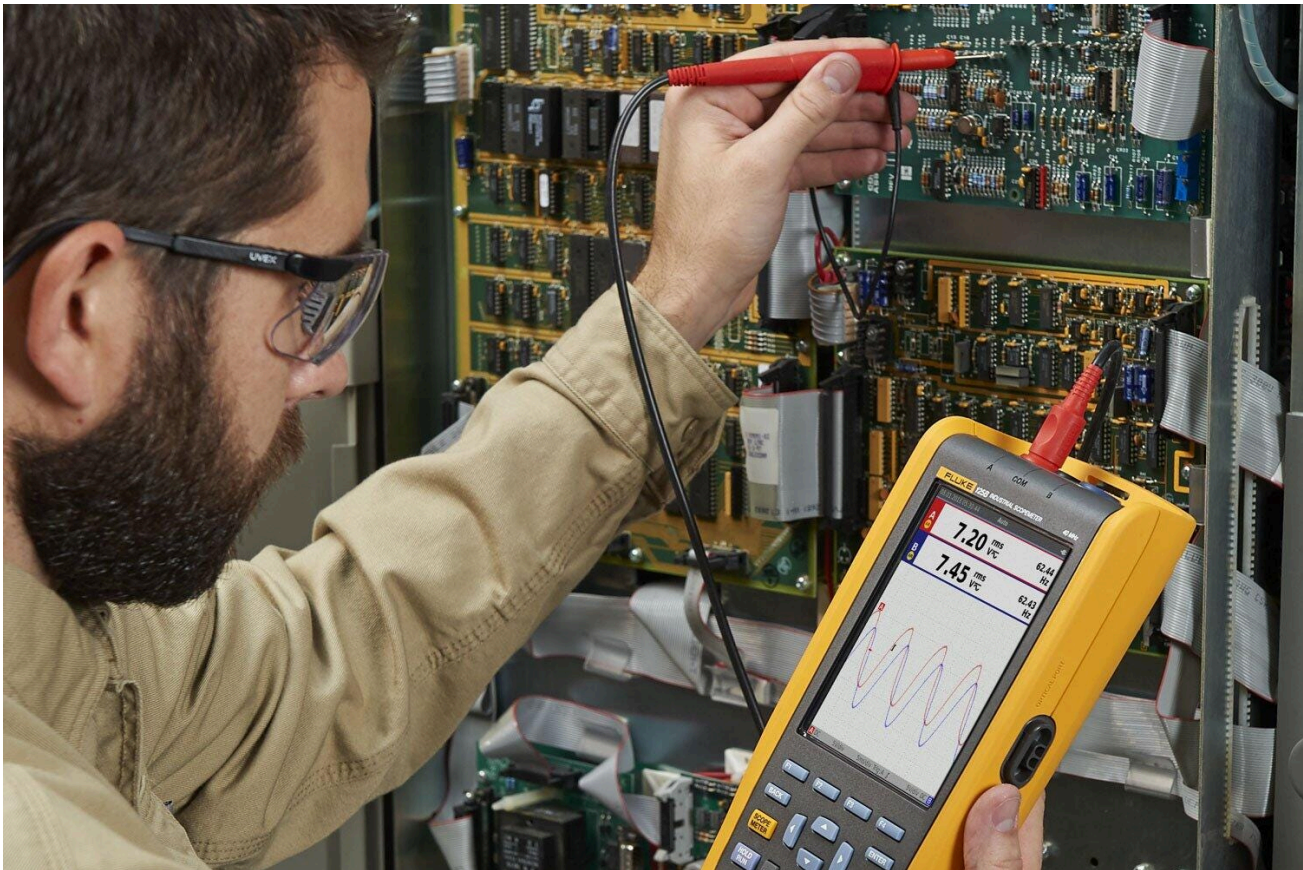
## Key features

- Dual-input digital oscilloscope and multimeter in a ScopeMeter® test tool
- Available with a 40 MHz or 20 MHz oscilloscope bandwidth
- Features Connect-and-View™ trigger simplicity for hands-off operation
- Includes IntellaSet™ technology to automatically and intelligently adjust numerical readout based on measured signal
- Provides a dual-input waveform and meter reading recorder for trending data over extended periods

## Product overview: Fluke 120B Series Industrial ScopeMeter® handheld Oscilloscopes

### Simplified testing, more insight

The compact ScopeMeter® 120B Series, is the rugged oscilloscope solution for industrial electrical and electro-mechanical equipment troubleshooting and maintenance applications. It's a truly integrated test tool, putting the functions of an oscilloscope, multimeter, and high-speed recorder into one, easy-to-use instrument. The ScopeMeter 120B Series also integrates with Fluke Connect® mobile app and FlukeView® for ScopeMeter software to enable further collaboration, data analysis, and archiving of critical test information.



## Faster electro-mechanical troubleshooting

Troubleshoot faster and get the answers you need to keep systems up and running. Display waveforms with Connect and View™ trigger and setup technology. Automatically view related numerical measurements using Fluke IntellaSet™ technology, all without making manual measurement adjustments. With Recorder Event Detect capabilities, elusive intermittent events are captured and logged for easy viewing and analysis.

## Connect-and-View™ triggering for an instant, stable display

Oscilloscope users know how difficult triggering can be. Using the wrong settings can lead to unstable waveform captures, and sometimes, even the wrong measurement data. Fluke's unique Connect-and-View™ triggering technology recognizes signal patterns, and automatically sets up the correct triggering to provide a stable, reliable, and repeatable display.

Connect-and-View™ triggering is designed to work with virtually any signal, including motor drives and control signals—without adjusting parameters, or even touching a button. Signal changes are instantly recognized, and settings are automatically adjusted providing a stable display even when measuring multiple test points in quick succession.

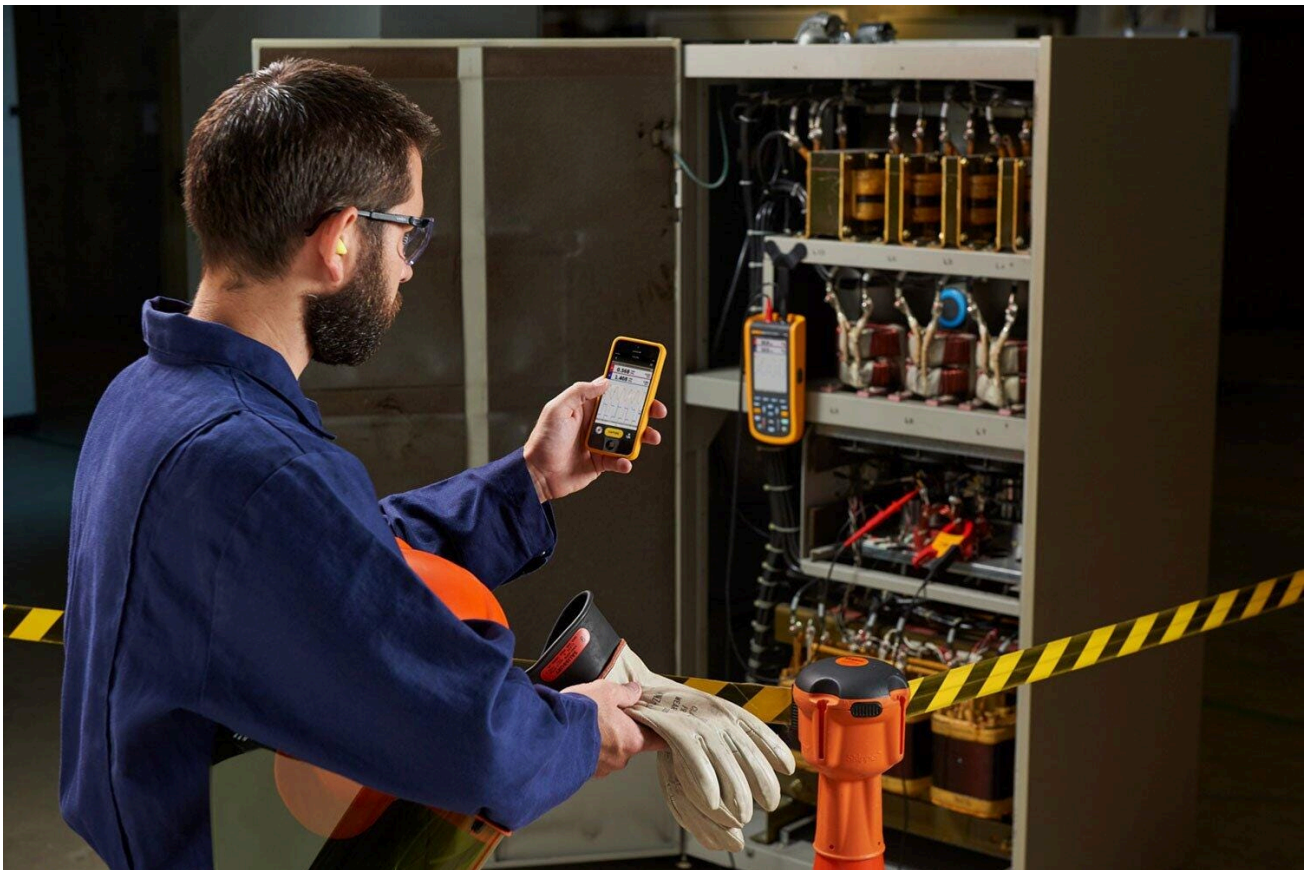


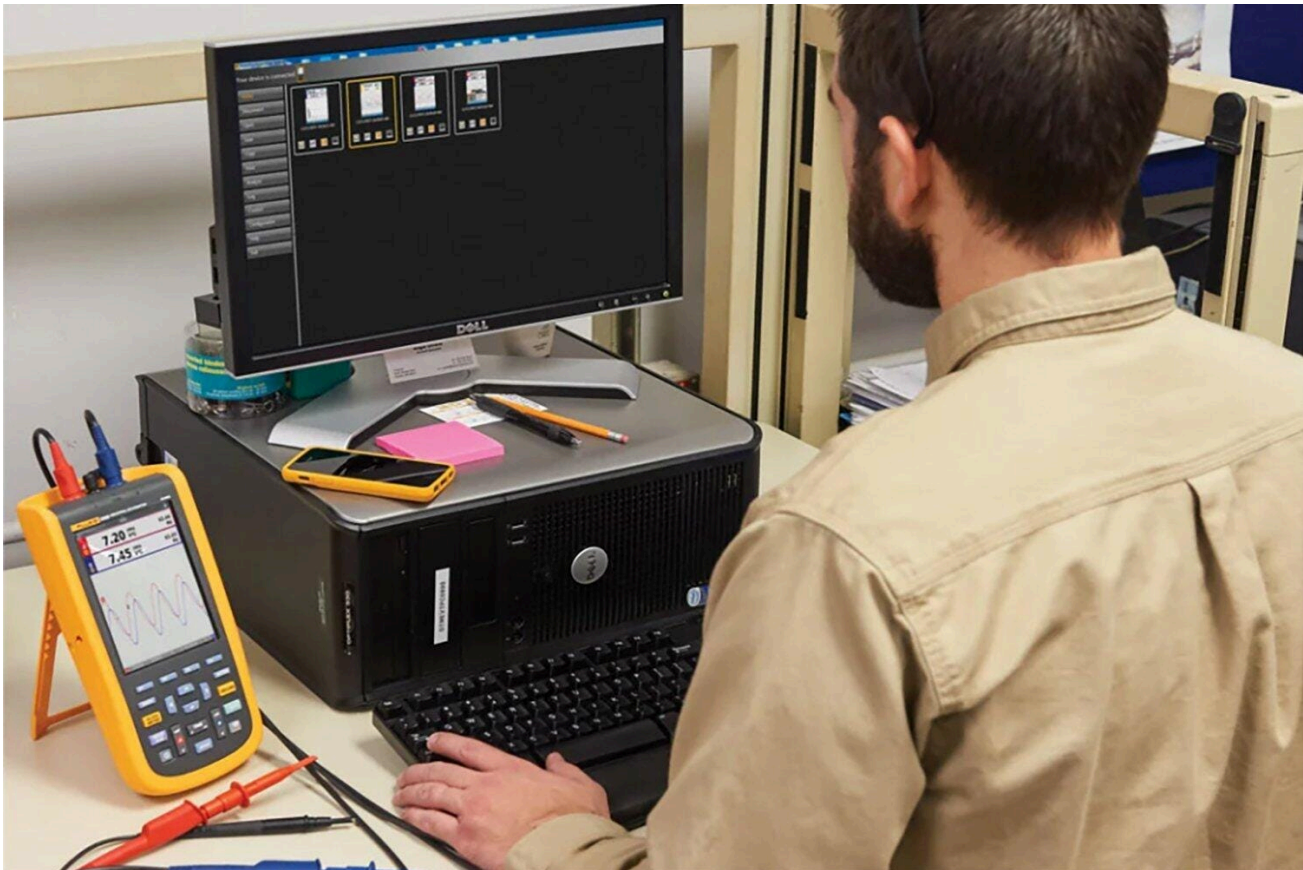
## IntellaSet™/AutoReading

The Auto Readings function with Fluke IntellaSet™ technology uses proprietary algorithms to intelligently analyze the measured waveform and automatically display the most appropriate numerical measurements on-screen, so you can get the data you need easier than ever before. For example, when the measured waveform is a line voltage signal, the V rms and Hz readings are automatically displayed, whereas if the measured waveform is a square wave, the V peak-peak and Hz readings are automatically displayed. Using IntellaSet™ technology in conjunction with Connect and-View™ automatic triggering you can be sure you're seeing not only the correct waveform, but the appropriate numerical reading as well. All without touching a button.

## Harmonics function measures periodic distortions

Harmonics are periodic distortions of voltage, current, or power sine waves. Harmonics in power distribution systems are often caused by non-linear loads such as switched mode dc power supplies and adjustable speed motor drives. Harmonics can cause transformers, conductors, and motors to overheat. In the Harmonics function, the Test Tool measures harmonics to the 51st. Related data such as dc components, THD (Total Harmonic Distortion), and K factor are measured to provide a complete insight into the electrical state of health of your loads.





## Comprehensive recorder modes help find intermittent faults

The toughest faults to find are those that happen only once in a while—intermittent events. They can be caused by bad connections, dust, dirt, corrosion or simply broken wiring or connectors. Other factors, like line outages and sags or the starting and stopping of a motor, can also cause intermittent events resulting in equipment shutdowns. When these events happen, you may not be around to see it. But your Fluke ScopeMeter Test Tool will.

You can either plot the minimum and maximum peak measurement values or record the waveform trace. And, with expandable microSD memory, recording sessions can be done for up to 14 days. This recorder is even more powerful with the addition of Recorder Event Detect, which makes detecting and logging intermittent faults easier than ever. Just set a threshold on a meter reading or scope trace and deviations are tagged as unique events. You no longer need to search through masses of data to pinpoint faults and can quickly step from one tagged event to the next, while still having access to the full data set.

\*Not all models are available in all countries. Check with your local Fluke representative.

## Specifications: Fluke 120B Series Industrial ScopeMeter® handheld Oscilloscopes

### Oscilloscope mode

#### Vertical

|                                                    |                                             |                                                                   |
|----------------------------------------------------|---------------------------------------------|-------------------------------------------------------------------|
| Frequency response - dc coupled                    | Without probes and test leads (with BB120)  | 123B: dc to 20 MHz (-3 dB)<br>124B and 125B: dc to 40 MHz (-3 dB) |
|                                                    | With STL120-IV 1:1 shielded test leads      | DC to 12.5 MHz (-3 dB) / dc to 20 MHz (-6 dB)                     |
|                                                    | With VP41 10:1 Probe                        | 123B: dc to 20MHz (-3 dB)<br>124B and 125B: dc to 40 MHz (-3 dB)  |
| Frequency response - ac coupled (lf roll off)      | Without probes and test leads               | <10 Hz (-3 dB)                                                    |
|                                                    | With STL120-IV 1:1 shielded test leads      | <10 Hz (-3 dB)                                                    |
|                                                    | With VP41 10:1 Probe                        | <10 Hz (-3 dB)                                                    |
| Rise time, excluding probes, test leads            | 123B <17.5 ns<br>124B and 125B <8.75 ns     |                                                                   |
| Input impedance                                    | Without probes and test leads               | 1 M $\Omega$ //20 pF                                              |
|                                                    | With BB120                                  | 1 M $\Omega$ //24 pF                                              |
|                                                    | With STL120-IV 1:1 shielded test leads      | 1 M $\Omega$ //230 pF                                             |
|                                                    | With VP41 10:1 Probe                        | 5 M $\Omega$ //15.5 pF                                            |
| Sensitivity                                        | 5 mV to 200 V/div                           |                                                                   |
| Analog bandwidth limiter                           | 10 kHz                                      |                                                                   |
| Display modes                                      | A, -A, B, -B                                |                                                                   |
| Max. input voltage A and B                         | Direct, with test leads, or with VP41 Probe | 600 Vrms Cat IV, 750 Vrms maximum voltage.                        |
|                                                    | With BB120                                  | 600 Vrms                                                          |
| Max. floating voltage, from any terminal to ground | 600 Vrms Cat IV, 750 Vrms up to 400Hz       |                                                                   |
| Horizontal                                         |                                             |                                                                   |
| Scope modes                                        | Normal, Single, Roll                        |                                                                   |
| Ranges (normal)                                    | Equivalent sampling                         | 123B: 20 ns to 500 ns/div,                                        |
|                                                    |                                             | 124B and 125B: 10 ns to 500 ns/div                                |
|                                                    | Real time sampling                          | 1 $\mu$ s to 5 s/div                                              |
|                                                    | Single (real time)                          | 1 $\mu$ s to 5 s/div                                              |
|                                                    | Roll (real time)                            | 1s to 60 s/div                                                    |
| Sampling rate (for both channels simultaneously)   | Equivalent sampling (repetitive signals)    | Up to 4 GS/s                                                      |
|                                                    | Real time sampling 1 $\mu$ s to 60 s/div    | 40 MS/s                                                           |
| Trigger                                            |                                             |                                                                   |
| Screen update                                      | Free run, on trigger                        |                                                                   |
| Source                                             | A, B                                        |                                                                   |

|                                                                                                                                                                                                        |                                                                                                                                                                                          |                                                                             |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| Sensitivity A and B                                                                                                                                                                                    | @ DC to 5 MHz                                                                                                                                                                            | 0.5 divisions or 5 mV                                                       |
|                                                                                                                                                                                                        | @ 40 MHz                                                                                                                                                                                 | 123B: 4 divisions                                                           |
|                                                                                                                                                                                                        |                                                                                                                                                                                          | 124B and 125B: 1.5 divisions                                                |
|                                                                                                                                                                                                        | @ 60 MHz                                                                                                                                                                                 | 123B: N/A                                                                   |
|                                                                                                                                                                                                        |                                                                                                                                                                                          | 124B and 125B: 4 divisions                                                  |
| Slope                                                                                                                                                                                                  | Positive, negative                                                                                                                                                                       |                                                                             |
| Advanced scope functions                                                                                                                                                                               |                                                                                                                                                                                          |                                                                             |
| Display modes                                                                                                                                                                                          | Normal                                                                                                                                                                                   | Captures up to 25 ns glitches and displays analog-like persistence waveform |
|                                                                                                                                                                                                        | Smooth                                                                                                                                                                                   | Suppresses noise from a waveform                                            |
|                                                                                                                                                                                                        | Glitch off                                                                                                                                                                               | Does not capture glitches between samples                                   |
|                                                                                                                                                                                                        | Envelope                                                                                                                                                                                 | Records and displays the minimum and maximum of waveforms over time         |
| Auto set (Connect-and-View™)                                                                                                                                                                           | Continuous fully automatic adjustments of amplitude, time base, trigger levels, trigger gap, and hold-off. Manual override by user adjustment of amplitude, time base, or trigger level. |                                                                             |
| Dual input meter                                                                                                                                                                                       |                                                                                                                                                                                          |                                                                             |
| The accuracy of all measurements is within ±(% of reading + number of counts) from 18 °C to 28 °C.                                                                                                     |                                                                                                                                                                                          |                                                                             |
| Add 0.1x (specific accuracy) for each °C below 18 °C or above 28 °C. For voltage measurements with 10:1 probe, add probe uncertainty +1%. More than one waveform period must be visible on the screen. |                                                                                                                                                                                          |                                                                             |
| Input A and input B                                                                                                                                                                                    |                                                                                                                                                                                          |                                                                             |
| DC voltage (VDC)                                                                                                                                                                                       |                                                                                                                                                                                          |                                                                             |
| Ranges                                                                                                                                                                                                 | 500 mV, 5 V, 50 V, 500 V, 750 V                                                                                                                                                          |                                                                             |
| Accuracy                                                                                                                                                                                               | ±(0.5% +5 counts)                                                                                                                                                                        |                                                                             |
| Common mode rejection (CMRR)                                                                                                                                                                           | >100 dB @ dc, >60 dB @ 50, 60, or 400 Hz                                                                                                                                                 |                                                                             |
| Full scale reading                                                                                                                                                                                     | 5000 counts                                                                                                                                                                              |                                                                             |
| True-rms voltages (V ac and V ac+dc)                                                                                                                                                                   |                                                                                                                                                                                          |                                                                             |
| Ranges                                                                                                                                                                                                 | 500 mV, 5 V, 50 V, 500 V, 750 V                                                                                                                                                          |                                                                             |
| Accuracy for 5% to 100% of range (DC coupled)                                                                                                                                                          | DC to 60 Hz (V ac+dc)                                                                                                                                                                    | ±(1% +10 counts)                                                            |
|                                                                                                                                                                                                        | 1 Hz to 60 Hz (V ac)                                                                                                                                                                     | ±(1% +10 counts)                                                            |
| Accuracy for 5% to 100% of range (AC or dc coupled)                                                                                                                                                    | 60 Hz to 20 kHz                                                                                                                                                                          | ±(2.5% +15 counts)                                                          |
| DC rejection (only VAC)                                                                                                                                                                                | >50 dB                                                                                                                                                                                   |                                                                             |
| Common mode rejection (CMRR)                                                                                                                                                                           | >100 dB @ dc                                                                                                                                                                             |                                                                             |
|                                                                                                                                                                                                        | >60 dB @ 50, 60, or 400 Hz                                                                                                                                                               |                                                                             |
| Full scale reading                                                                                                                                                                                     | 5000 counts, reading is independent of any signal crest factor.                                                                                                                          |                                                                             |
| Peak                                                                                                                                                                                                   |                                                                                                                                                                                          |                                                                             |

|                                                    |                                                                                       |                                                                      |
|----------------------------------------------------|---------------------------------------------------------------------------------------|----------------------------------------------------------------------|
| Modes                                              | Max peak, Min peak, or pk-to-pk                                                       |                                                                      |
| Ranges                                             | 500 mV, 5 V, 50 V, 500 V, 2200 V                                                      |                                                                      |
| Accuracy                                           | Accuracy Max peak or Min peak                                                         | 5% of full scale                                                     |
|                                                    | Accuracy Peak-to-Peak                                                                 | 10% of full scale                                                    |
| Full scale reading                                 | 500 counts                                                                            |                                                                      |
| Frequency (Hz)                                     |                                                                                       |                                                                      |
| Ranges                                             | 123B: 1 Hz, 10 Hz, 100 Hz, 1 kHz, 10 kHz, 100 kHz,1 MHz, 10 MHz, and 50 MHz           |                                                                      |
|                                                    | 124B and 125B: 1 Hz, 10 Hz, 100 Hz, 1 kHz, 10 kHz, 100 kHz, 1 MHz, 10 MHz, and 70 MHz |                                                                      |
| Frequency range                                    | 15 Hz (1 Hz) to 50 MHz in continuous autoset                                          |                                                                      |
| Accuracy @1 Hz to 1 MHz                            | ±(0.5% +2 counts)                                                                     |                                                                      |
| Full scale reading                                 | 10,000 counts                                                                         |                                                                      |
| RPM                                                |                                                                                       |                                                                      |
| Max reading                                        | 50.00 kRPM                                                                            |                                                                      |
| Accuracy                                           | ±(0.5% +2 counts)                                                                     |                                                                      |
| Duty cycle (PULSE)                                 |                                                                                       |                                                                      |
| Range                                              | 2% to 98%                                                                             |                                                                      |
| Frequency range                                    | 15 Hz (1 Hz) to 30 MHz in continuous autoset                                          |                                                                      |
| Pulse width (PULSE)                                |                                                                                       |                                                                      |
| Frequency range                                    | 15 Hz (1 Hz) to 30 MHz in continuous autoset                                          |                                                                      |
| Full scale reading                                 | 1000 counts                                                                           |                                                                      |
| Amperes (AMP)                                      |                                                                                       |                                                                      |
| With current clamp                                 | Ranges                                                                                | Same as V dc, V ac, V ac+dc, or PEAK                                 |
|                                                    | Scale factors                                                                         | 0.1 mV/A, 1 mV/A, 10 mV/A, 100 mV/A, 400 mV/A, 1 V/A, 10 mV/mA       |
|                                                    | Accuracy                                                                              | Same as V dc, V ac, V ac+dc, or PEAK (add current clamp uncertainty) |
| Temperature (TEMP) with optional temperature probe |                                                                                       |                                                                      |
| Range                                              | 200 °C/div (200 °F/div)                                                               |                                                                      |
| Scale factor                                       | 1 mV/°C and 1 mV/°F                                                                   |                                                                      |
| Accuracy                                           | As V dc (add temp. probe uncertainty)                                                 |                                                                      |
| Decibel (dB)                                       |                                                                                       |                                                                      |
| 0 dBV                                              | 1 V                                                                                   |                                                                      |
| 0 dBm (600 Ω /50 Ω)                                | 1 mW referenced to 600 Ω or 50 Ω                                                      |                                                                      |
| dB on                                              | V dc, V ac, or Vac+dc                                                                 |                                                                      |
| Full scale reading                                 | 1000 counts                                                                           |                                                                      |

| Crest factor (CREST)   |                                                                                                                                       |                                                |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------|
| Range                  | 1 to 10                                                                                                                               |                                                |
| Full scale reading     | 90 Counts                                                                                                                             |                                                |
| Phase                  |                                                                                                                                       |                                                |
| Modes                  | A to B, B to A                                                                                                                        |                                                |
| Range                  | 0 to 359 degrees                                                                                                                      |                                                |
| Resolution             | 1 degree                                                                                                                              |                                                |
| Power (125B only)      |                                                                                                                                       |                                                |
| Configurations         | 1 phase / 3 phase 3 conductor balanced loads (3 phase: fundamental component only, AUTOSET mode only)                                 |                                                |
| Power factor (PF)      | Ratio between watts and VA range - 0.00 to 1.00                                                                                       |                                                |
| Watt                   | RMS reading of multiplying corresponding samples of input A (volts) and input B (amperes)                                             |                                                |
|                        | Full scale reading                                                                                                                    | 999 counts                                     |
| VA                     | Vrms x Arms                                                                                                                           |                                                |
|                        | Full scale reading                                                                                                                    | 999 counts                                     |
| VA reactive (var)      | $\sqrt{((VA)^2 - W^2)}$                                                                                                               |                                                |
|                        | Full scale reading                                                                                                                    | 999 counts                                     |
| Vpwm                   |                                                                                                                                       |                                                |
| Purpose                | To measure on pulse width modulated signals, like motor drive inverter outputs                                                        |                                                |
| Principle              | Readings show the effective voltage based on the average value of samples over a whole number of periods of the fundamental frequency |                                                |
| Accuracy               | As Vrms for sinewave signals                                                                                                          |                                                |
| Input A to common      |                                                                                                                                       |                                                |
| Ohm (Ω)                |                                                                                                                                       |                                                |
| Ranges                 | 123B and 124B                                                                                                                         | 500 Ω , 5 kΩ, 50 kΩ, 500 kΩ, 5 MΩ, 30 MΩ       |
|                        | 125B                                                                                                                                  | 50 Ω, 500 Ω , 5 kΩ, 50 kΩ, 500 kΩ, 5 MΩ, 30 MΩ |
| Accuracy               | ±(0.6% + 5 counts) 50 Ω ±(2% + 20 counts)                                                                                             |                                                |
| Full scale reading     | 50 Ω to 5 MΩ - 5000 counts, 30 MΩ - 3000 counts                                                                                       |                                                |
| Measurement current    | 0.5 mA to 50 nA, decreases with increasing ranges                                                                                     |                                                |
| Open circuit voltage   | <4 V                                                                                                                                  |                                                |
| Continuity (Cont)      |                                                                                                                                       |                                                |
| Beep                   | <(30 Ω ±5 Ω) in 50 Ω range                                                                                                            |                                                |
| Measurement current    | 0.5 mA                                                                                                                                |                                                |
| Detection of shorts of | ≥1 ms                                                                                                                                 |                                                |

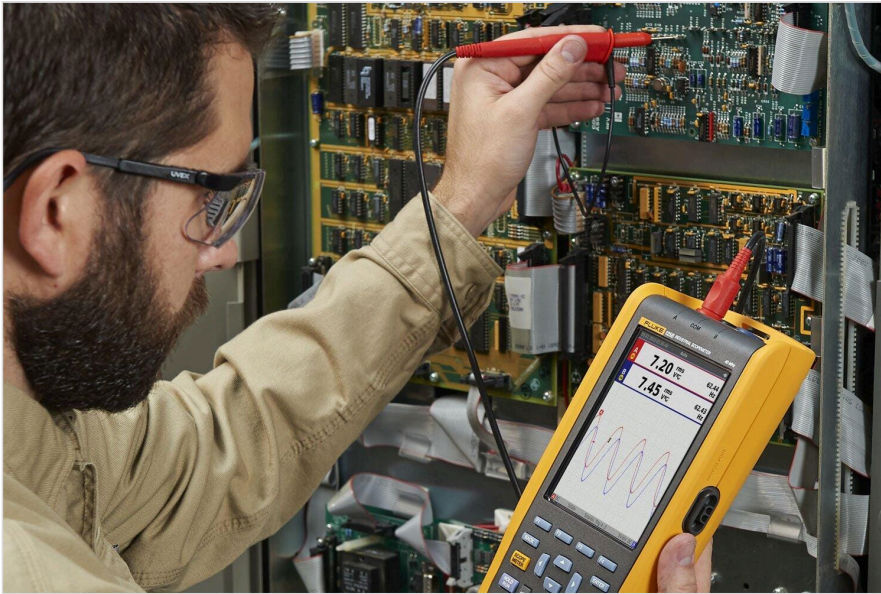
| Diode                                                                                                                                                                                                                      |                                                                                                                                                                                   |        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|
| Measurement voltage                                                                                                                                                                                                        | @0.5 mA                                                                                                                                                                           | >2.8 V |
|                                                                                                                                                                                                                            | @open circuit                                                                                                                                                                     | <4 V   |
| Measurement current                                                                                                                                                                                                        | 0.5 mA                                                                                                                                                                            |        |
| Polarity                                                                                                                                                                                                                   | + on input A, - on COM                                                                                                                                                            |        |
| Capacitance (CAP)                                                                                                                                                                                                          |                                                                                                                                                                                   |        |
| Ranges                                                                                                                                                                                                                     | 50 nF, 500 nF, 5 μF, 50 μF, 500 μF                                                                                                                                                |        |
| Full scale reading                                                                                                                                                                                                         | 5000 counts                                                                                                                                                                       |        |
| Measurement current                                                                                                                                                                                                        | 500 nA to 0.5 mA, increases with increasing ranges                                                                                                                                |        |
| Advanced meter functions                                                                                                                                                                                                   |                                                                                                                                                                                   |        |
| Zero Set                                                                                                                                                                                                                   | Set actual value to reference                                                                                                                                                     |        |
| AutoHold (on A)                                                                                                                                                                                                            | Captures and freezes a stable measurement result. Beeps when stable. AutoHold works on the main meter reading, with thresholds of 1 Vpp for AC signals and 100 mV for DC signals. |        |
| Fixed decimal point                                                                                                                                                                                                        | Activated by using attenuation keys                                                                                                                                               |        |
| Cursor Readout (124B and 125B)                                                                                                                                                                                             |                                                                                                                                                                                   |        |
| Sources                                                                                                                                                                                                                    | A, B                                                                                                                                                                              |        |
| Single vertical line                                                                                                                                                                                                       | Average, min and max readout                                                                                                                                                      |        |
|                                                                                                                                                                                                                            | Average, min, max and time from start of readout (in ROLL mode; instrument in HOLD)                                                                                               |        |
|                                                                                                                                                                                                                            | Min, max and time from start of readout (in RECORDER mode; instrument in HOLD)                                                                                                    |        |
|                                                                                                                                                                                                                            | Harmonics values in POWER QUALITY mode.                                                                                                                                           |        |
| Dual vertical lines                                                                                                                                                                                                        | Peak-peak, time distance and reciprocal time distance readout                                                                                                                     |        |
|                                                                                                                                                                                                                            | Average, min, max and time distance readout (in ROLL mode; instrument in HOLD)                                                                                                    |        |
| Dual horizontal lines                                                                                                                                                                                                      | High, low and peak-peak readout                                                                                                                                                   |        |
| Rise or fall time                                                                                                                                                                                                          | Transition time, 0%-level and 100%-level readout (manual or auto leveling; auto leveling only possible in single channel mode)                                                    |        |
| Accuracy                                                                                                                                                                                                                   | As oscilloscope accuracy                                                                                                                                                          |        |
| Recorder                                                                                                                                                                                                                   |                                                                                                                                                                                   |        |
| The recorder captures meter readings in Meter Recorder mode or continuously captures waveform samples in Scope Recorder mode. The information is stored on internal memory or on optional SD card (with the 125B or 124B). |                                                                                                                                                                                   |        |
| The results are displayed as Chart recorder display that plots a graph of min and max values of Meter measurements over time or as a waveform recorder display that plots all the captured samples.                        |                                                                                                                                                                                   |        |
| Meter readings                                                                                                                                                                                                             |                                                                                                                                                                                   |        |
| Measurement Speed                                                                                                                                                                                                          | Maximum 2 measurement/s                                                                                                                                                           |        |
| Record Size (min, max, average)                                                                                                                                                                                            | 2 M readings for 1 channel                                                                                                                                                        |        |

|                                                                               |                                                   |                                                                          |
|-------------------------------------------------------------------------------|---------------------------------------------------|--------------------------------------------------------------------------|
| Recorded Time Span                                                            | 2 weeks                                           |                                                                          |
| Maximum number of events                                                      | 1024                                              |                                                                          |
| Waveform record                                                               |                                                   |                                                                          |
| Maximum sample rate                                                           | 400 K sample/s                                    |                                                                          |
| Size Internal memory                                                          | 400 M samples Recorded Time                       |                                                                          |
| Span internal memory                                                          | 15 minutes at 500 μs/div<br>11 hours at 20 ms/div |                                                                          |
| Record Size SD card                                                           | 1.5 G samples                                     |                                                                          |
| Recorded Time Span SD card                                                    | 11 hours at 500 μs/div<br>14 days at 20 ms/div    |                                                                          |
| Maximum number of events                                                      | 64                                                |                                                                          |
| Power Quality (125B only)                                                     |                                                   |                                                                          |
| Readings                                                                      | Watt, VA, var, PF, DPF, Hz                        |                                                                          |
| Watt, VA, var ranges (auto)                                                   | 250 W to 250 MW, 625 MW, 1.56 GW                  |                                                                          |
|                                                                               | When selected: total (% r)                        | ±(2% + 6 counts)                                                         |
|                                                                               | When selected: fundamental (% f)                  | ±(4% + 4 counts)                                                         |
| DPF                                                                           | 0.00 to 1.00                                      |                                                                          |
| PF                                                                            | 0.00 to 1.00, ±0.04                               |                                                                          |
| Frequency range                                                               | 10.0 Hz to 15.0 kHz<br>40.0 Hz to 70.0 Hz         |                                                                          |
| Number of Harmonics                                                           | DC to 51                                          |                                                                          |
| Readings / Cursor readings<br>(fundamental 40 Hz to 70 Hz)                    | Vrms / Arms /Watt                                 | Each harmonic from fundamental<br>maybe selected for individual readings |
| Includes frequency of fundamental, phase Angle and K-factor (in Amp and Watt) |                                                   |                                                                          |
| BusHealth tester (Fluke 125B only)                                            |                                                   |                                                                          |
| Type                                                                          | Subtype                                           | Protocol                                                                 |
| AS-i                                                                          | NEN-EN50295                                       |                                                                          |
| CAN                                                                           | ISO-11898                                         |                                                                          |
| Interbus S                                                                    | RS-422                                            | EIA-422                                                                  |
| Modbus                                                                        | RS-232                                            | RS-232/EIA-232                                                           |
|                                                                               | RS-485                                            | RS-485/EIA-485                                                           |
| Foundation Fieldbus                                                           | H1                                                | 61158 type 1, 31.25 kBit                                                 |
| Profibus                                                                      | DP                                                | EIA-485                                                                  |
|                                                                               | PA                                                | 61158 type 1                                                             |
| Miscellaneous                                                                 |                                                   |                                                                          |
| Display                                                                       | Type                                              | 5.7-inch color active matrix TFT                                         |
|                                                                               | Resolution                                        | 640 x 480 pixels                                                         |

|                      |                                                                    |                                                                                                                                                                                                                   |
|----------------------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Waveform Display     | Vertical                                                           | 10 div of 40 pixels                                                                                                                                                                                               |
|                      | Horizontal                                                         | 12 div of 40 pixels                                                                                                                                                                                               |
| Power                | External                                                           | Via Power Adapter BC430                                                                                                                                                                                           |
|                      | Input voltage                                                      | 10 V DC to 21 V DC                                                                                                                                                                                                |
|                      | Power consumption                                                  | 5 W typical                                                                                                                                                                                                       |
|                      | Input connector                                                    | 5 mm jack                                                                                                                                                                                                         |
|                      | Internal                                                           | Via Battery Pack BP290                                                                                                                                                                                            |
|                      | Battery power                                                      | Rechargeable Li-Ion 10.8 V                                                                                                                                                                                        |
|                      | Operating time                                                     | 7 hours with 50% backlight brightness                                                                                                                                                                             |
|                      | Charging time                                                      | 4 hours with test tool off, 7 hours with test tool on                                                                                                                                                             |
|                      | Allowable ambient temp                                             | 0 to 40 °C (32 to 104 °F) during charging                                                                                                                                                                         |
| Memory               | Internal memory can store 20 data sets (screen waveform and setup) | Micro SD card slot with optional SD card (max size of 32 GB)                                                                                                                                                      |
| Mechanical           | Size                                                               | 259 x 132 x 55 mm (10.2 x 5.2 x 2.15 in)                                                                                                                                                                          |
|                      | Weight                                                             | 1.4 kg (3.2 lb) including battery pack                                                                                                                                                                            |
| Interface            | Optically isolated                                                 | Transfer screen copies (bitmaps), settings and data                                                                                                                                                               |
|                      | USB to PC/laptop                                                   | OC4USB optically isolated USB adapter/cable, (optional), using FlukeView® software for Windows®.                                                                                                                  |
|                      | Optional WiFi adapter                                              | Fast transfer of screen copies (bitmaps), settings and data to PC/laptop, tablet, smartphone, etc. A USB port is provided for attaching the WiFi dongle. Do not use the USB port with a cable for safety reasons. |
| <b>Environmental</b> |                                                                    |                                                                                                                                                                                                                   |
| Environmental        | MIL-PRF-28800F, Class 2                                            |                                                                                                                                                                                                                   |
| Temperature          | Battery Operation                                                  | 0 to 40 °C (32 to 104 °F)                                                                                                                                                                                         |
|                      | Power Adapter Operation                                            | 0 to 50 °C (32 to 122 °F)                                                                                                                                                                                         |
|                      | Storage                                                            | -20 to 60 °C (-4 to 140 °F)                                                                                                                                                                                       |
| Humidity (Operating) | @ 0 to 10 °C (32 to 50 °F)                                         | Non-condensing                                                                                                                                                                                                    |
|                      | @ 10 to 30 °C (50 to 86 °F)                                        | 95%                                                                                                                                                                                                               |
|                      | @ 30 to 40 °C (86 to 104 °F)                                       | 75%                                                                                                                                                                                                               |
|                      | @ 40 to 50 °C (104 to 122 °F)                                      | 45%                                                                                                                                                                                                               |
| Storage              | @ -20 to 60 °C (-4 to 140 °F)                                      | Non-condensing                                                                                                                                                                                                    |

|                                   |                                                   |                                                                                     |
|-----------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------|
| Altitude                          | Operating at 3 km (10,000 feet)                   | CAT III 600 V                                                                       |
|                                   | Operating at 2 km (6,600 feet)                    | CAT IV 600 V                                                                        |
|                                   | Storage                                           | 12 km (40,000 feet)                                                                 |
| EMC electromagnetic compatibility | International                                     | IEC 61326-1: Industrial, CISPR 11: Group 1, Class A                                 |
|                                   | Korea (KCC)                                       | Class A Equipment (Industrial Broadcasting & Communication Equipment)               |
|                                   | USA (FCC)                                         | 47 CFR 15 subpart B. This product is considered an exempt device per clause 15.103. |
| Wireless radio with adapter       | Frequency range                                   | 2412 MHz to 2462 MHz                                                                |
|                                   | Output power                                      | <100 mW                                                                             |
| Enclosure protection              | IP51, ref: EN/IEC60529                            |                                                                                     |
| Safety                            | General                                           | IEC 61010-1: Pollution Degree 2                                                     |
|                                   | Measurement                                       | IEC 61010-2-033: CAT IV 600 V/CAT III 750 V                                         |
| Max. input voltage input A and B  | Direct on input or with leads                     | 600 Vrms CAT IV for derating                                                        |
|                                   | With Banana-to-BNC Adapter BB120                  | 600 Vrms for derating                                                               |
|                                   | Max. floating voltage from any terminal to ground | 600 Vrms Cat IV, 750 Vrms up to 400 Hz                                              |

## Ordering information



### **FLUKE-125B/NA**

Fluke 125B Industrial ScopeMeter® Hand-Held Oscilloscope (40 MHz), North America version

Part#: 4755829

UPC#: 095969814898

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Includes:

- Fluke 125B Hand-Held Oscilloscope
  - Shielded Test Leads with Black Ground Leads
  - Test Lead Black (for Grounding)
  - Hook Clips (red, blue)
  - Banana-to-BNC Adapters (black, x1)
  - 10:1 Voltage Probe
  - i400s AC Current Clamp
  - USB Angled Adapter
  - WiFi USB Adapter\*
  - Switch Mode Power Supply, Adapter/Battery Charger
  - Rechargeable Li-ion Battery Pack
- 

### **FLUKE-123B/NA/S**

Fluke 123B Industrial ScopeMeter® Hand-Held Oscilloscope (20 MHz), North America version, with Soft Carrying Case, Magnetic Hanger, FlukeView® ScopeMeter® Software for Windows®, Screen Protector

Part#: 4755909

UPC#: 095969814973

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Includes:

- Fluke 123B Hand-Held Oscilloscope
  - Shielded Test Leads with Black Ground Leads
  - Test Lead Black (for Grounding)
  - Hook Clips (red, blue)
  - Banana-to-BNC Adapters (black, x1)
  - USB Angled Adapter
  - WiFi USB Adapter\*
  - Switch Mode Power Supply, Adapter/Battery Charger
  - Rechargeable Li-ion Battery Pack
  - Soft Carrying Case
  - Magnetic Hanger
  - FlukeView® ScopeMeter® Software for Windows®
  - Screen Protector
- 

## **FLUKE-123B/NA**

Fluke 123B Industrial ScopeMeter® Hand-Held Oscilloscope (20 MHz), North America version

Part#: 4755667

UPC#: 095969814737

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Includes:

- Fluke 123B Hand-Held Oscilloscope
  - Shielded Test Leads with Black Ground Leads
  - Test Lead Black (for Grounding)
  - Hook Clips (red, blue)
  - Banana-to-BNC Adapters (black, x1)
  - USB Angled Adapter
  - WiFi USB Adapter\*
  - Switch Mode Power Supply, Adapter/Battery Charger
  - Rechargeable Li-ion Battery Pack
- 

## **FLUKE-124B/NA**

Fluke 124B Industrial ScopeMeter® Hand-Held Oscilloscope (40 MHz), North America version

Part#: 4755746

UPC#: 095969814812

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Includes:

- Fluke 124B Hand-Held Oscilloscope
- Shielded Test Leads with Black Ground Leads
- Test Lead Black (for Grounding)
- Hook Clips (red, blue)

- Banana-to-BNC Adapters (black, x1)
  - 10:1 Voltage Probe
  - USB Angled Adapter
  - WiFi USB Adapter\*
  - Switch Mode Power Supply, Adapter/Battery Charger
  - Rechargeable Li-ion Battery Pack
- 

## **FLUKE-124B/NA/S**

Fluke 124B Industrial ScopeMeter® Hand-Held Oscilloscope (40 MHz), North America version, with Soft Carrying Case, Magnetic Hanger, FlukeView® ScopeMeter® Software for Windows®, Screen Protector

Part#: 4755982

UPC#: 095969815055

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Includes:

- Fluke 124B Hand-Held Oscilloscope
  - Shielded Test Leads with Black Ground Leads
  - Test Lead Black (for Grounding)
  - Hook Clips (red, blue)
  - Banana-to-BNC Adapters (black, x1)
  - 10:1 Voltage Probe
  - USB Angled Adapter
  - WiFi USB Adapter\*
  - Switch Mode Power Supply, Adapter/Battery Charger
  - Rechargeable Li-ion Battery Pack
  - Soft Carrying Case
  - Magnetic Hanger
  - FlukeView® ScopeMeter® Software for Windows®
  - Screen Protector
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## **FLUKE-125B/NA/S**

Fluke 125B Industrial ScopeMeter® Hand-Held Oscilloscope (40 MHz), North America version, with Soft Carrying Case, Magnetic Hanger, FlukeView® ScopeMeter® Software for Windows®, Screen Protector

Part#: 4756068

UPC#: 095969815130

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Includes:

- Fluke 125B Hand-Held Oscilloscope
- Shielded Test Leads with Black Ground Leads
- Test Lead Black (for Grounding)
- Hook Clips (red, blue)
- Banana-to-BNC Adapters (black, x1)
- 10:1 Voltage Probe

- i400s AC Current Clamp
  - USB Angled Adapter
  - WiFi USB Adapter\*
  - Switch Mode Power Supply, Adapter/Battery Charger
  - Rechargeable Li-ion Battery Pack
  - Soft Carrying Case
  - Magnetic Hanger
  - FlukeView® ScopeMeter® Software for Windows®
  - Screen Protector
-

**Fluke.** *Keeping your world up and running.®*

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