

Connect the ScopeMeter test tool and view the result: the start of every measurement

Application Note

It frequently happens that service engineers have to spend a lot of time adjusting their measuring device such as a portable oscilloscope for an optimal setting. Valuable time is spent completing this set up, and ideally, this could be done automatically.

With the introduction of the new ScopeMeter 190 Series II, Fluke has revamped its unique feature, Connect and View.

Scope users know how difficult triggering can be. Wrong settings show unstable and sometimes wrong results. Fluke's unique Connect and View recognizes signal patterns, and automatically sets up correct triggering, attenuator and time base settings. Switching on the ScopeMeter portable oscilloscope to display correct signal patterns only takes a couple of seconds, and this is exactly what an operator wants.

Settings regarding

- amplitude,
- timebase,
- triggering,
- etc.

are automatically detected and adjusted, followed by displaying the signal in the correct ratio with respect to the horizontal and vertical axis. At least 1.5 to 4 periods of the signal are measured before the pattern is shown.

Connect and View provides a stable, reliable and repeatable display of virtually any signal, including motor drive and control signals, without touching a button. Signal changes are instantly recognized and settings adjusted for, once again, a stable display. This is all done automatically, but manual overruling is still possible. If manual overruling is needed, the ScopeMeter 190 Series will switch from automatic to 1/2 automatic, which is visible on the display.

Figure 1 gives an example of the different types of waveforms which can be detected by Connect & View. If required the criteria for best settings can be optimized by switching on one or all of the following options:

- Automatic trigger



- AC/DC coupling
- Glitch detect

Figure 2 shows the different settings.

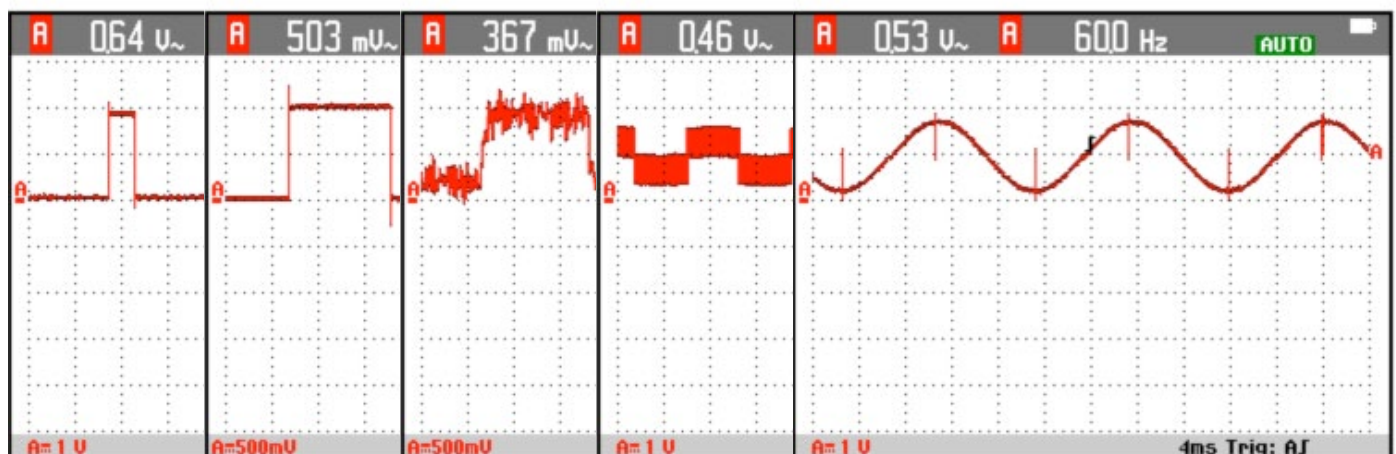


Figure 1.

And there is more . . . Multiple Channel Input

The ScopeMeter Series II has two or four input channels, which can be used and selected independently and in any combination, offering the possibility to measure signals from different sources simultaneously. Any of the input channels may be selected as the trigger source. Moreover, the channel input is built in such a way that these are electrically and mechanically isolated from each other. This enables the possibility to measure different voltages in different (sub) systems that have different reference or "ground" points without any cross-link reference.

The operator can set-up the ScopeMeter for a detailed measurement by choosing from a range of readings, which are displayed after pressing the "Scope" and "F2" button.

Figure 2 shows the list with options. In total, four readings can be displayed in the gray banner on top of the display simultaneously, without losing details of the signal under investigation.

Figure 3 shows the result for one channel when four parameters are selected.

When readings are also selected the operator gets all required results once he has switched on the ScopeMeter without any further interference.

This is a good starting point for further actions such as using the zoom and cursor function or switching on the recording function.

Protecting for wrong conclusions

When the user is zooming in on a signal by pressing the mV or nS button, there is a change he will lose the overview of the integral signal because he is only looking at the details leading to a possibility, thus causing him to draw a wrong conclusion. At a certain stage, the soft displays "OL" (Over Load) or "---" in the banner to make sure the user cannot draw any conclusions regarding the quality of the signal.

Conclusion

Connect and View is an important feature for the operator as he can simply switch on the ScopeMeter and watch the signal and its selected readings. It saves valuable time as the operator does not have to spend time adjusting parameters. This means he can immediately concentrate on diagnosing the signals rather than adjusting knobs and switches during a measurement in order to get the signals as required. This is an important feature certainly when working in high energized areas such as a CAT III or CAT IV environment.

Selecting the required readings even further supports the Connect and View feature as the operator immediately sees the required details of the signal under investigation.

The ScopeMeter Series II is equipped with a battery pack, enabling it to be used, in an environment where there is no power supply, for a period of up to seven hours. It is designed to operate in a dirty, unsafe and harsh environment.

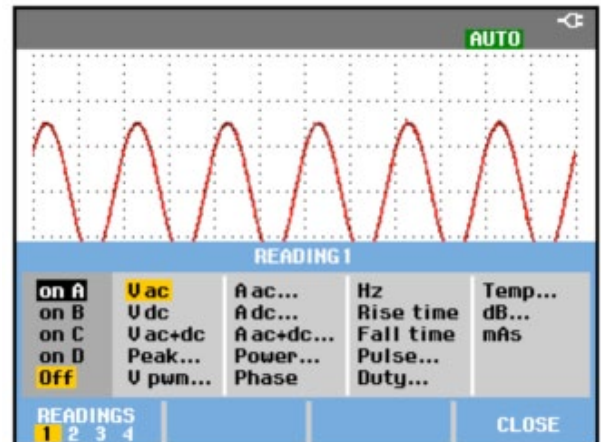


Figure 2.

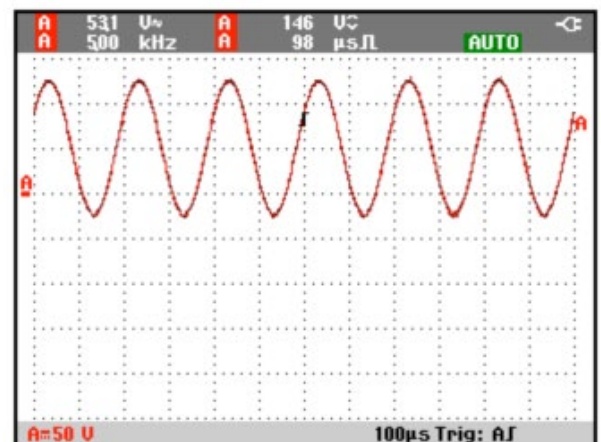


Figure 3.

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