Bandwidth

Other interesting features include the 100 kHz bandwidth of the Fluke 287 DMM, V ac and mV ac functions, and the ability to read voltage values expressed as dBV or dBm. This true-rms reading function is essential for evaluating the performance of servo loops and audio amplifiers.

And, since one of the uses for dB measurements is testing the frequency response of amplifiers, the Fluke 287 DMM designers included the ability to set up the instrument to simultaneously measure dBV or dBm and the frequency of the measurement in dual display mode. Add to this the ability to setup the dBm mode for a broad range of reference impedances and the 287 becomes the tool of choice for amplifier and audio transmission line performance testing.

Capacitance

Among the new features is capacitance that now reads up to 100 mF. With all of today's supercaps, and the large capacitors used in electronic motor drives and power inverters, this order of magnitude contribution to range is sure to be popular.

AC + DC true-rms voltage and current

Volts or amps readings can be made showing individual ac and dc values in a dual display, or the two values may be combined to display the true-rms signal present.

The dual display mode is useful for evaluating dc power supplies and any present ripple voltage. This mode also supports troubleshooting triac-based power controllers where both ac and dc values are present. AC+DC true-rms allows evaluation of the heating effect of the combined values. You can also revert to a standard dc measurement where you can then evaluate duty cycle and pulse widths of these complex waveforms in the dual display mode.

Temperature

The mV dc menu offers the ability to convert the meter to a thermometer in either degrees Fahrenheit or Celsius, based on the output of a K-type thermocouple. In this mode, the meter monitors the temperature of the input jacks to provide the reference value needed for accurate measurement. And, using the recording function to log temperature over time means the test technician can evaluate electronic system cooling over a wide range of conditions for a day or more.

Basics

This new meter excels in the basics too, beginning with its 50,000 count resolution. Take for example, its 50 mV range where you can read voltages down to 1 µV. Basic dc accuracy is 0.025 %, while basic true-rms ac readings are accurate to 0.3 %. And remember, ac measurements can be made over a broad frequency range—up to 100 kHz.

All in all, the new Fluke 287 is yet another example of how suggestions by busy technicians can be integrated into a powerful and still easy to use tool.

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