



Component Tester DB231

Fast and very accurate measurements at 1MHz, 100kHz, 10kHz and 1kHz



- **4 measuring frequencies: 1MHz, 100kHz, 10kHz and 1kHz**
- **Overall accuracy better than 0,05% and 2×10^{-4} for loss factor**
- **Especially suitable for ceramic, film, foil, and small tantalum capacitors, as well as all other CLR applications**
- **Built-in contact check function**
- **Very high measuring speed: 6 to 20ms from trig to end of measurement, depending of frequency**
- **Input protection: 2 Joule up to 1kV**
- **Measuring ranges: 0,1pF to 1mF depending of frequency**
- **Measures up to 0,9nF (0,2%) @ 1MHz**
- **Measuring cables: 1m or 39,3 inch (supplied as standard)**
- **Internal bias voltage: Up to ± 3 VDC on generator terminal, set in 0,1V steps.**
- **External bias voltage: Up to ± 48 VDC**
- **Average: 1 to 99 measurements**
- **CE approved**
- **Display readings: Direct or deviation capacitance and tan δ or ESR for loss measurements and L/Q, Rs, Rp, Z**
- **Focused strategy on component testing for nearly 50 years**

General

The DB231 Component Tester is specially designed for very high accuracy and automatic high-speed testing of capacitors. The instrument is reliable, user-friendly and easy to set up to any test application on production lines, in quality control departments or in laboratories.

The DB231 performs capacitance and loss factor tests at any of the 4 standard frequencies. Dual frequency tests at any combination of frequencies are possible as well. Or the user may set up a test sequence in order to perform multiple frequency testing, easily and quickly.

As standard the instrument has a built-in comparator for deviation measurements, IEEE488 (GPIB) and RS232C data interfaces as well as handler interface (opto-coupler type) with 12+4 bins for production sorting. The high-speed data interfaces may be used for an external computer in order to control the system, or for collection of data for statistics and analysis.

Bin sorting with up to 12 bins for capacitance for 1st frequency and up to 4 bins for tan δ using 2nd frequency. Or tan δ may be measured at several frequencies using the 4 bins for different levels of the dissipation factor.

The standard fitted PCMCIA card is the smart way of storing set-ups. Fail-safe loading of set-ups to several instruments will be done fast and efficient.

The test cables are as standard connected to the front panel of the instrument. Another possibility is to order the DB231 in the version MCR in order to have the test cables connected to the rear panel only. Test cable length of 1m or 39,3 inches is possible.



Specifications for DB231:

Measured Parameters: C, L, R, Z (serial or parallel)

Measuring Frequencies: 1MHz, 100k, 10k and 1kHz with multiple frequency facility

Measuring Voltages:	1 V RMS up to 10 μ F at 1kHz
	1 V RMS up to 1 μ F at 10kHz
	1 V RMS up to 100nF at 100kHz
	1 V RMS up to 10nF at 1MHz
	Above: (linearly decreasing with the impedance) Programmable in 0.1V steps (maximum 1,5V RMS)

Measuring Speed:		1kHz	10kHz	100kHz	1MHz	
	From trig to end of measurement:	*	20ms	20ms	6ms	6ms
	From trig to data ready:	*	28ms	28ms	14ms	14ms
	Additional time per meas. by average		16ms	16ms	2ms	2ms
	*) allowing 3ms contact bouncing or 1 range change					
	Multiple measurements (average):	The sum of each measurement (from trig to end of measurement) + 8ms for calculation time				

Measuring Cables: 1m (39,3 inch) from bridge module to fixture (Cables supplied by Danbridge)

Input Protection: 2 Joule up to 1kV or 4 μ F charged 1000V

Bias Voltage internal: Up to $\pm 3,0$ VDC on generator terminal, set in 0,1V steps (internally generated)

	Frequency	1kHz	10kHz	Accuracy ± 1 digit	
				Capacitance	Tan δ
Accuracy:		1pF - 39pF	0,1pF - 3,9pF	0,5%	$\pm ,0010$
		40pF - 3,9 μ F	4pF - 3,9 μ F	0,05%	$\pm ,0002$
		4 μ F - 399 μ F	4 μ F - 39 μ F	0,1%	$\pm ,0007$
		400 μ F - 1mF	40 μ F - 400 μ F	1%	$\pm ,0020$
		100kHz	1MHz		
		,03pF - ,9pF	,01pF - 3,9pF	0,5%*	$\pm ,0010$
		1pF - ,9 μ F	4pF - 0,9nF	0,05%	$\pm ,0002$
			1nF - 9,9nF	0,1%	$\pm ,0007$
		1 μ F - 9 μ F	10nF - 29nF	0,2%	$\pm ,0010$
		10 μ F - 40 μ F	30nF - 99nF	1%	$\pm ,0020$

*Accuracy $\pm 0,2$ pF *Accuracy ± 2 pF *Accuracy $\pm 0,2$ pF

Bin Sorting: Up to 12 limits for 1st parameter and 4 limits for 2nd parameter by opto-couplers

Interfaces: Rear panel: IEEE 488 (GPIB) and RS232C
Control: Measure end, data ready, trig ready, fault and status
Trig input: DC, AC and contact closure
Front panel: PC card for set-ups, save and loading

Environment: Ambient temperature: 10-30 degrees Celsius
Warm-up time: Minimum 30 minutes
Power: 90-130 and 200-260 V AC, 50-60 Hz,

Calibration interval: Minimum: Every 12 months

Dimensions: Mainframe:
Height: 140mm or 5,5 inch
Width: 438mm or 17,2 inch
Depth: 360mm or 14,2 inch
Weight: Total 16kg or 36 lb.

Export Packing

Europe	Overseas
30cm	32cm
51cm	52cm
56cm	55cm
20kg	22kg