



## Component Tester DB233

**Fast and very accurate measurements at 100kHz, 10kHz, 1kHz and 100Hz**



- **4 measuring frequencies: 100kHz, 10kHz, 1kHz and 100Hz**
- **Overall accuracy better than 0,05% and  $2 \times 10^{-4}$  for loss factor**
- **All round CLR Bridge designed for manual or automatic use.**
- **Especially suitable for film, foil, tantalum and electrolytic capacitors, as well as all other CLR applications**
- **Built-in contact check function**
- **Very high measuring speed: 20 to 180ms from trig to end of measurement, depending of frequency**
- **Input protection: 2 Joule up to 1kV**
- **Measuring ranges: 0,1pF to 3mF depending of frequency**
- **Measures up to 9mF (0,2%) @ 100kHz**
- **Measuring cables: 1m or 39,3 inch (supplied as standard)**
- **Internal bias voltage: Up to  $\pm 3\text{VDC}$  on generator terminal, set in 0,1V steps.**
- **Average: 1 to 99 measurements**
- **CE approved**
- **Display readings: Direct or deviation capacitance and tan  $\delta$  or ESR for loss measurements and L/Q, Rs, Rp, Z**
- **Focused strategy on component testing for nearly 50 years**

### General

The DB233 Component Tester is specially designed for very high accuracy for manual 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 DB233 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 1<sup>st</sup> frequency and up to 4 bins for tan  $\delta$  using 2<sup>nd</sup> frequency. Or tan  $\delta$  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 and measuring data. 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 DB233 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 DB233:

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

**Measuring Frequencies:** 100k, 10k, 1k and 100Hz with multiple frequency facility

<b>Measuring Voltages:</b>	1 V RMS up to 100μF at 100Hz
	1 V RMS up to 10μF at 1kHz
	1 V RMS up to 1μF at 10kHz
	1 V RMS up to 0,1μF at 100kHz
	Above: (linearly decreasing with the impedance) Programmable in 0.1V steps (maximum 1,5V RMS)

<b>Measuring Speed:</b>		100Hz	1kHz	10kHz	100kHz
	From trig to end of measurement:	*	180ms	20ms	20ms
	From trig to data ready:	*	190ms	28ms	28ms
	Additional time per meas. by average		160ms	16ms	16ms
	*) 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 the instrument to fixture (Cables supplied by Danbridge)

**Input Protection:** 2 Joule up to 1kV or 4μF charged 1000V

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

	Frequency	100Hz	1kHz	Accuracy ±1 digit Capacitance	Tan δ
<b>Accuracy:</b>		300pF - 3nF	1pF - 39pF	0,5%	± ,0010
			40pF - 3,9μF	0,05%	± ,0002
		3nF - 30μF	4μF - 399μF	0,1%	± ,0007
		30μF - 300μF		0,1%	± ,0010
		300μF - 3mF	400μF - 1mF	1%	± ,0020
		10kHz	100kHz		
		0,1pF - 3,9pF	,03pF - ,9pF	0,1%*	± ,0010
		4pF - 3,9μF	1pF - ,9μF	0,05%	± ,0002
		4μF - 39μF		0,1%	± ,0007
			1μF - 9μF	0,2%	± ,0010
		40μF - 400μF	10μF - 40μF	1%	± ,0020

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

**Bin Sorting:** Up to 12 limits for 1<sup>st</sup> parameter and 4 limits for 2<sup>nd</sup> 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