

# DB623 Megohmmeter with Pre-charge

Versatile and accurate measurements up to 1.000.000 GΩ  
with 2 HV Power Supplies for Pre- & Fine charge of capacitors



- High speed testing 45 ms
- High accuracy  $\pm 2\%$  to 1 TΩ
- Measurement Range from 10 kΩ up to 1 PΩ (Peta = 1.000.000 Giga Ω)
- Leakage current down to 1 pA
- Accuracy  $\pm 2\%$ ,  $\pm 1$  pA
- Test Voltages: 10 V to 1 kV in 1 V steps
- Contact Check Function
- Powerful charge capability
- Charge current: Double power supplies, pre charge 2/ 25/ 100 mA and fine charge 2/ 25/ 100 mA
- 4 ranges and/or auto range
- 5 Programmable Limits
- Designed to be used with 40 channel IR Scanner type DB640

## GENERAL:

The DB623 Megohmmeter is designed for use in various applications such as testing insulation resistance of cables and testing leakage current in capacitors.

The instrument is microprocessor controlled. The menu driven bright back-lit LCD display enables quick, logical and easy-to-use operation.

The DB623 is specially designed for capacitor testing machines. The DB623 has two high voltage Power supplies supporting outputs up to 1000 V 100 mA for pre-charge stations.

The instrument can be programmed to automatically perform timed testing, consisting of up to 20 test steps, either high current charging, normal charging, or a measurement sequence. Each sequence may last up to 60 min.

The DB623 Megohmmeter also features pre-programmed sequences, for example a sequence for Quality Control, that charges until a minimum insulation resistance is reached. Then it discharges automatically.

Programmable delay of measurement: Up to 10 s in steps of 1 ms after external triggering.

The measurement results may be used for BIN sorting with one out of five limit sets.

DB623 is fitted with both standards IEEE (GPIB) and RS232 Interfaces. Also an optically insulated Handler/ Limits Interface is included.

The high speed of DB623 with only 45 ms between measurements gives the possibility of implementing prediction intelligence in an external PC for very high-speed production test of capacitors.

The low input impedance of 10 kΩ for test current above 10 nA, and 1 MΩ for test current below 10 nA is also a contributory factor in reaching the high speed testing. The special built in double power supplies support pre-charge of large capacitors that speeds up insulation testing significantly.

Automatic check of contact failure for capacitors and capacitive elements like cables is a feature implemented for high volume production. The contact check does not increase the test time.

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## Specifikations



<b>DC CURRENT MEASUREMENTS:</b>	
Ranges:	Range 1: 1 pA to 10 nA; Zi = 1 MΩ or 10 kΩ (selectable)
	Range 2: 2 nA to 100nA; Zi = 10 kΩ
	Range 3: 20 nA to 10 uA; Zi = 10 kΩ
	Range 4: 2 uA to 1 mA; Zi = 10 kΩ
Accuracy:	±2 % of value ±1 pA
<b>TEST VOLTAGE:</b>	
Range:	10 V to 1 kV in 1 V steps
Accuracy:	±2 % of value or ±1 V
Stability:	±10 ppm @ 10 % change in line voltage, ±20 ppm/degree C
Source Resistance:	22 Ω
Current Limits:	2, 25 or 80 mA (100 mA short circuit)
Switching:	Manually ON/OFF from front panel or controlled by a built-in timer, or by remote
Timing:	Programmable Fast Charging: 0 to 9999 ms (charge resistance 22 Ω)
Programmable Measurement delay:	0 to 9999 ms
Discharge Resistance:	10 kΩ / 11 W, Max. dischargable energy for voltage > 300V: 500 Joule
Discharge Time:	t = 0.1 x Cx (in μF) with V test decreasing to 1 % of test level
Voltage tracing between HT1 and HT2:	UHT2-UHT1 ≤ 40 mV
<b>RESISTANCE MEASUREMENTS:</b>	
Range:	10 kΩ to 1 PΩ (dependent on test Voltage) (Peta = 1.000.000 Giga)
Accuracy:	For I > 100 pA: 2%
	For I ≤ 100 pA: Acc. equals the acc. of current measurement.
<b>MEASURING SPEED:</b>	
Trig Mode:	One Measurement: <48 ms (excl. charging)
	Average up to n = 100 measurements: <48 + (N-1) x 40 ms (excl. charging)
Continuous Mode:	Direct Reading: 90 to 4000 ms depending on average
	Bar Graph: Display update every 40 ms
<b>DISPLAY READING:</b>	
Direct reading:	Current or Resistance, 3,5 digits
Bar Graph:	8 ranges with 2 decades per graph with fixed- or auto scaling
x – y Graph:	Current or resistance scale vs. time scale
<b>STANDARD FITTED INTERFACES:</b>	
LIMITS:	5 built-in programmable limits on resistance or current
IEEE 488: (IEEE 488-1 and 2)	“Talker Only” and Talker/Listener” Modes. True sub-set of Standard protocol
RS232C:	Baud rate up to 19.200 Baud. Full two-way control/output
Control I/O:	Opt coupler input / output 25 V/10 mA. Trig, Measure END Signal, Trig Ready Signal, Data Ready Signal, Fault Signal, Limit Outputs
Ambient Temperature:	10 – 40 degrees Celsius
Power:	90 – 130 and 200 – 260 V AC 50 – 60 Hz
<b>DIMENSIONS:</b>	
Height:	140 mm/ 5.5 inch
Width:	438 mm/ 17.2 inch
Depth:	360 mm/ 14.2 inch
Weight:	12.4 kg/ 27.3 lbs.
ACCESSORIES SUPPLIED:	Line power connector, Two 1.5 m coax cables with H.T. BNC connectors
	Brackets for 19” rack-mounting, Manual in English
<b>OPTIONS:</b>	
Available in Scanner versions:	5 channels/40 Channels
Fixture for axial and radial components:	Yes
Test probe with trig contact:	Yes
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