

Test Equipment Solutions Datasheet

Test Equipment Solutions Ltd specialise in the second user sale, rental and distribution of quality test & measurement (T&M) equipment. We stock all major equipment types such as Spectrum Analyzers, Signal Generators, Oscilloscopes, Power Meters, Network Analyzers etc from all the major suppliers such as Keysight, Tektronix, Anritsu and Rohde & Schwarz.

We are focused at the professional end of the marketplace, primarily working with customers for whom high performance, quality and service are key, whilst realising the cost savings that second user equipment offers. We fully test & refurbish equipment in our in-house, traceable Lab. Items are supplied with manuals, accessories and typically a full no-quibble 1 year warranty. Our staff have extensive backgrounds in T&M which enables us to deliver industry-leading service and support. We endeavour to be customer focused in every way right down to the detail, such as offering free delivery on sales, presenting flexible technical + commercial solutions and supplying a loan unit during warranty repair, if available.

As well as the headline benefit of cost saving, second user offers shorter lead times, higher reliability and multivendor solutions. Rental, of course, is ideal for shorter term needs and offers fast delivery, flexibility, try-before-you-buy, zero capital expenditure, lower risk and off balance sheet accounting. Both second user and rental improve the key business measure of Return On Capital Employed.

We are based in at Oakley, Bedfordshire in the UK from where we supply test equipment worldwide. Our facility incorporates Sales, Support, Admin, Logistics and our own in-house Lab.

All products supplied by Test Equipment Solutions include:

- No-quibble parts & labour warranty (we provide transport for UK mainland addresses).
- Free loan equipment during warranty repair, if available.
- Full electrical, mechanical and safety refurbishment in our 40GHz in-house Lab.
- Certificate of Conformance (calibration available on request).
- Manuals and accessories required for normal operation.
- Free insured delivery to your UK mainland address (sales).
- Support from our team of seasoned Test & Measurement engineers.
- ISO9001 quality assurance.

Test Equipment Solutions Ltd
Unit 3 Highfield Court
Highfield Road
Oakley
Bedfordshire
MK43 7TA

Telephone: 01183 800 800

Email: info@TestEquipmentHQ.com
Web: www.TestEquipmentHQ.com





Data Sheet

7200 Series Capacitance Meter



TEST EQUIPMENT SOLUTIONS
Quality Second User Test Equipment for Sale or Rental
info@TestEquipmentHQ.com : www.TestEquipmentHQ.com

Taking performance to a new peak

7200 Series Capacitance Meter

The 7200 is a sophisticated capacitance meter equally suited for demanding R&D, as well as manufacturing applications. Two phase-sensitive detectors are used to extract and display both the parallel capacitance and conductance of the device under test. From the measured parameters the 7200 can calculate and display the equivalent parallel and series resistance, series capacitance, dissipation factor, and quality factor Q. Capacitance can also be displayed as a deviation from a selectable reference standard in % or pF units. The 7200 uses a software filter technique which averages consecutive measurements to achieve a stable display value. Test levels are programmable from 15 to 100 mV, making the 7200 suitable for a wide variety of semiconductor measurements. Up to 99 complete front panel setups can be stored and recalled in internal non-volatile memory.

Bias Voltage

The 7200 accepts, measures and displays external bias voltage over a range of ± 60 V. An internal bias supply is also included and is programmable over a ± 60 V range. This bias capability, along with fast responding analog C, G and V outputs, makes the 7200 ideal for C-V and G-V semiconductor plots, as well as DLTS material studies.

Automatic Zeroing

One key stroke zeros the 7200 for stray capacitance and loss. The 7200 is capable of zeroing up to 2000 pF. As a result, the maximum range of the instrument can be effectively increased to 4000 pF by first zeroing the 7200 with a 2000 pF specimen connected to the input.

Special Functions

A variety of special functions are provided to extend the operation of the 7200 to meet specific requirements. For example, the instrument can be forced to hold a particular measurement or bias range. The averaging filter length can be selected from no averaging up to 500 measurements. Special functions can also be used, in conjunction with external standards, to calibrate the instrument from the front panel or over the IEEE-488 interface.



- Capacitance range, 0 to 2000 pF
- Conductance range, 0 to 2000 μ S
- Test frequency, 1 MHz crystal-controlled
- Test level, selectable 15, 30, 50, and 100 mV
- External bias ± 60 V
- Standard programmable internal bias ± 60 V
- Analog outputs proportional to both C and G and bias
- GPIB standard

Bus Operation

The 7200 is equipped with a full function IEEE-488 interface bus. The following can be remotely programmed: all panel functions, including special functions; store and recall panel setups; and zero and bias controls. For rapid data transfer, C, G and V information is available simultaneously. Front panel setups can be stored and recalled by program location.

Specifications

Capacitance Display

Capacitance Range	0 to 2000 pF
Full Scale Ranges	2, 20, 200, 2000 pF
Accuracy	0.25% of reading +0.2% of full scale +0.005 pF
Resolution	0.001 pF from 0 to 2 pF 0.01 pF from 2 to 20 pF 0.1 pF from 20 to 200 pF 1 pF above 200 pF

Conductance Display

Conductance Range	0 to 2000 μ S
Full Scale Ranges	2, 20, 200, 2000 μ S
Accuracy	2.5% of reading +2.0% of full scale +0.05 μ S + 2 (ω C) ² Where C is the parallel capacitance in Farads
Residual Series Resistance	2 Ω maximum
Resolution	0.01 μ S from 0 to 2 μ S 0.1 μ S from 20 to 200 μ S 1 μ S from 200 to 2000 μ S 10 μ S above 2000 μ S

Computed Parameters

Series Capacitance	0.000 to \pm 9999 pF
Series Resistance	0.00 Ω to \pm 9.999 M Ω
Parallel Resistance	\pm 488.5 Ω to \pm 9.999 M Ω
Dissipation	0.000 to \pm 999.9
Quality Factor	0.000 to \pm 999.9
Δ C	0.000 to \pm 4047 pF
Δ %	0.00 to \pm 99.99%

Temperature Influences

Operating Temperature	10° C to 40° C
Amplitude Error	< \pm 0.017% /° C
Phase Error	< \pm 0.2° /° C
Warmup Time	2 Hours

Test Signal

Frequency	1.0 MHz, crystal-controlled
Level	Programmable 15, 30, 50 and 100 mV

External Bias

Voltage Range	\pm 60 V
Maximum current	62.5 mA fuse protected

External Bias Display

Voltage Range	\pm 60 V
Resolution	0.1 V
Accuracy	0.25% of rdg + 4 counts

Internal Bias

Voltage Range	\pm 60 volts, programmable from the front panel
Accuracy	0.5% of setting + 10 counts
Resolution	1 mV for voltages \leq 20 V 10 mV for voltages > 20 V
Maximum Current	5 mA

Rear Panel Connectors

Analog Out, C	2 volts full scale, source resistance 1000 ohms, linearity 0.1% of reading + 0.05% of full scale
Analog Out, G	2 volts full scale, source resistance 1000 ohms, linearity 0.1% of reading + 0.05% of full scale
Analog Out, Bias	2 volts full scale Source resistance 1000 ohms
IEEE-488	Complies with IEEE-488-1978 Implements AH1, SH1, T6, TEO, L4, LEO, SR1, RL1, PPO, DC1, DT1, CO and E1
External Bias In	\pm 60 volts max 62.5 mA fuse protected

Front Panel Controls and Displays

Controls	Keystitches enable data entry and selection of major functions
Displays	Vacuum Fluorescent 20-digit display of BIAS LEVEL, TEST LEVEL, CAPACITANCE, LOSS, ADRS AND SPCL

Other Specifications

Weight	12 lbs (5.4 kg)
Power Requirements	100, 120, 220, 240 V AC 50-60 Hz, 35 VA
Council Directives	89/336/EEC//93/68/EEC, 73/23/EEC//93/68/EEC & Standards EN55011, EN50082-1, EN61010-1
CE Mark	Declares Conformity to European Community (EC)

Accessories

Rack mount kit, single	PIN 950002
Rack mount kit, dual	PIN 950001



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info@TestEquipmentHQ.com : www.TestEquipmentHQ.com

Wireless Telecom Group Inc.
25 Eastmans Rd
Parsippany, NJ
United States
Tel: +1 973 386 9696
Fax: +1 973 386 9191
www.boonton.com

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