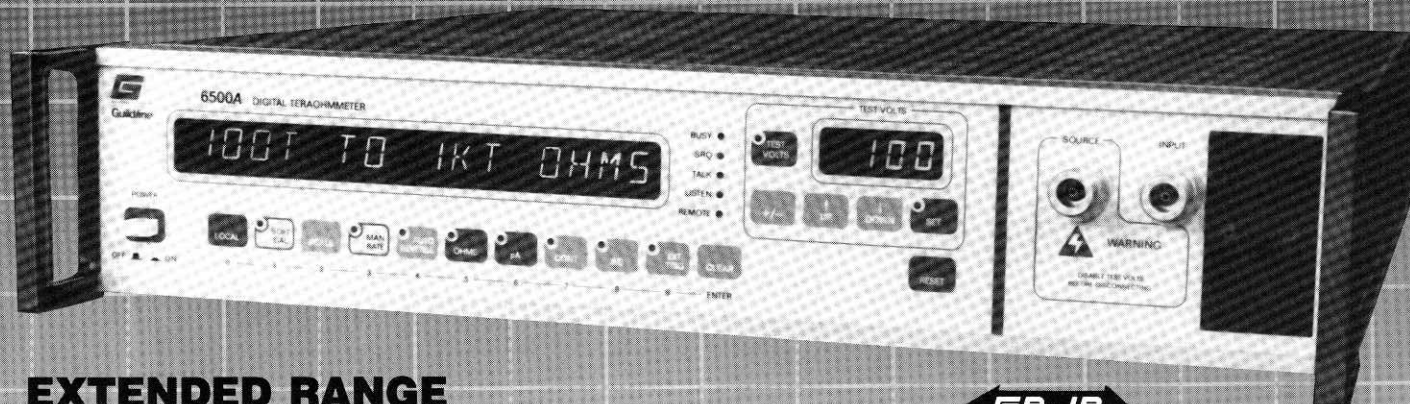


Programmable Digital Teraohmmeter 6500A



EXTENDED RANGE



Features

- Range 100 kilohms to 100,000 teraohms
- Automatic sensing of resistance range integration time threshold voltage
- Fully programmable
- Current Mode - range 10^{-3} amps to 10^{-13} amps
- Test voltage 1 to 1000 volts
- Sofcal™ for on-board intelligence and front panel calibration
- IEEE-488 and RS 232C built-in as standard
- Rear input option

The 6500A Digital Teraohmmeter is the latest instrument of its type from Guildline Instruments. It expands the range of the earlier 6500 to a level never available before in a high resistance measuring instrument. The 6500A teraohmmeter offers true state-of-the-art ultra-high resistance measurement superior to bridge techniques. Through its inherently linear design of the measurement section, the 6500A achieves the highest accuracy and range commercially available today.

This new teraohmmeter is fully automatic, functioning under microprocessor control and Guildline's unique Sofcal on-board calibration firmware. The instrument measures extremely high resistances, up to 10^{17} ohms, or very small currents down to 10 femptoamps. Measurement time for the instrument is 5ms to 1000 seconds and sensing of instrument resistance range, integration time and threshold voltage is fully automatic.

The 6500A utilizes Sofcal to provide access to GP-IB status and the RS 232C configuration. In addition, Sofcal provides supply and reference voltage diagnostics, auto reverse tolerance window, protection resistor recompensation, integrator

linearity check and standard calibration from the front panel. The calibration is simply achieved by attaching a known reference resistor to the input connectors (Accessory 65206) and starting the self calibration procedure. The on-board firmware also provides a help menu for ease of operation.

Production line testing, calibration of electrometers, semiconductor testing, capacitance leakage measurement, film surface resistivity measurement, relay isolation testing, insulation resistance measurement, and other applications (performed in the past by previous teraohmmeters) can all be applied to automatic testing by the 6500A. In the current mode, the instrument can be used to measure chemical reaction rates, photo-electric effects and ionization effects.

IEEE-488 and RS 232C interfaces are built-in as standard as is an external trigger input to command a measurement from an external device, process or timing mechanism.

A range of calibrating resistors are available (65206) as well as other accessories for use with the 6500A.

SPECIFICATIONS:
Accuracy (90 days) @ 23°C ± 5°C

Range in Ohms	Limit of error [± % of reading]	Resolution [digits]
10 ⁵	0.1	6
10 ⁶	0.1	6
10 ⁷	0.025	6
10 ⁸	0.035	6
10 ⁹	0.05	5
10 ¹⁰	0.07	5
10 ¹¹	0.1	5
10 ¹²	0.2	5
10 ¹³	0.3	4
10 ¹⁴	0.5	4
*10 ¹⁵	1.0	3
*10 ¹⁶	10.0	3
†*10 ¹⁷	10.0	3

* These accuracies are inferred from the basic linearity of the instrument.

† Limited to ± 3°C from calibration temperature.

Range in Current	Limit of error [± % of reading]	Maximum Resolution [digits]
10 ⁻³	0.25	6
10 ⁻⁴	0.35	6
10 ⁻⁵	0.5	6
10 ⁻⁶	0.7	5
10 ⁻⁷	1.0	5
10 ⁻⁸	1.0	5
10 ⁻⁹	1.0	5
10 ⁻¹⁰	1.0	4
10 ⁻¹¹	1.0	4
10 ⁻¹²	10.0	3
10 ⁻¹³	50.0	3

HOW TO ORDER

6500A Programmable Digital Teraohmmeter

0: Without rear input option

1: With rear input option

Accessories:

65201

Adaptor for Penn Airborne Resistors Type 9A5100 Series

65205

Shielded Sample Enclosure

65206/100M

Standard 100M Ω

Calibrating Resistor

65206/1G

Standard 1G Ω

Calibrating Resistor

65206/10G

Standard 10G Ω

Calibrating Resistor

65206/S

Standard Special Value

Calibrating Resistor

65210

Interconnection Lead Set

TM6500A-A-00 Technical Manual (included)

Range 10⁵ to 10¹⁷ ohms or
10⁻¹³ to 10⁻³ amps

Input Impedance: 100 k ohms (current mode)

Measurement time: 5 ms to 1000 seconds

Test voltage: 1, 2, 5, 10, 20, 50, 100, 200, 500 & 1000 Volts (Programmable)

Interfaces: IEEE-488 and RS 232C

Output connectors: 'N' Type

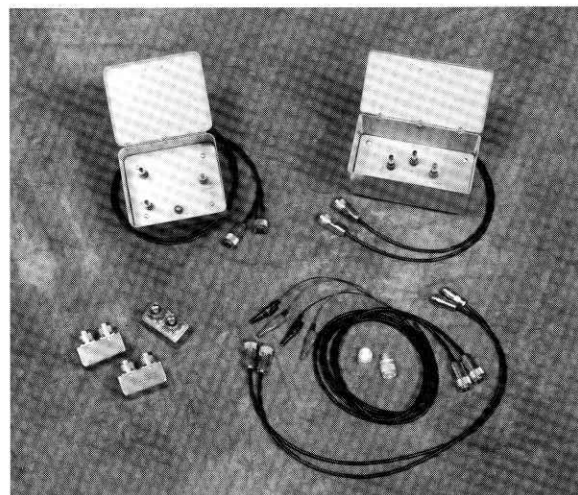
General specifications: Dimensions Width 444 mm (17.5in)
Height 89 mm (3.5in)
Depth 457 mm (18in)

Rack Mounting - Standard 19in

Weight 11.4 kg (25 lbs.)

Power supply - Voltage 95 to 130V
or 190 to 260V
Frequency - 50/60Hz
Consumption - 30VA
Fuse - 1A or 0.5A slo blo

Environment - Temperature,
15 to 30°C working
- 30 to 70°C storage
Humidity - 50%RH at 30°C



(shown left to right)

Top: 65205, 65201

Bottom: 65206 Series, 65210

For Services and/or Calibration Contact:

GCS

Guildline Calibration Services
A Primary Standards Laboratory

Guildline

"Blending Craft and Technology"™

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