



SHORT FORM CATALOGUE



*Calibration Standards and
Measurement Solutions*

**STANDARD RESISTORS
PRECISION DC SHUNTS
DIGITAL THERMOMETERS
NON-INDUCTIVE AC SHUNTS
INTELLIGENT TERAOHMMETER
PRECISION DECADE STANDARDS
PRECISION AIR TEMPERATURE BATHS
PRECISION OIL TEMPERATURE BATHS
ULTRA-HIGH RESISTANCE STANDARDS
1 MHz TRANSCONDUCTANCE AMPLIFIER
HIGH PRECISION, WIDE RANGE BRIDGES
TEMPERATURE STABILIZED RESISTANCE STANDARDS**

DC RESISTANCE MEASUREMENT

6520 PROGRAMMABLE DIGITAL TERAOHMMETER

- Range: $10^5 \sim 10^{17} \Omega$
- Ultra accurate with direct and transfer measurement modes
- Automatic sensing or manual modes of operation
- Built-in math and statistics functions with graphical display
- Optional surface and volume resistivity measurement
- Optional temperature, humidity and pressure monitoring
- RS232 and IEEE-488.2 interfaces
- TeraCal data acquisition and analysis software



6675A WIDE RANGE AUTOMATIC RESISTANCE/THERMOMETRY BRIDGE

- Range: $1 \text{ m}\Omega \sim 1 \text{ G}\Omega$ or $1 \mu\Omega \sim 1 \text{ G}\Omega$ with range extender
- Uncertainty 0.1 ppm of reading, 0.01 ppm linearity, 0.001 ppm resolution
- Ratio 0.001:1 \sim 13.4:1
- $1 \mu\text{A} \sim 150 \text{ mA}$ for up to $100 \text{ k}\Omega$ and $15.7 \sim 990 \text{ V}$ above $100 \text{ k}\Omega$
- Better than 0.05 mK uncertainty in thermometry application
- RS232 and IEEE-488.2 interfaces
- Data acquisition and analysis software for both resistance and temperature measurement included



6622 SERIES RESISTANCE/THERMOMETRY BRIDGES

- Excellent accuracy and stability
- Comprehensive measurement ranges
- Ratio up to 100:1
- Designed to meet a variety of measurement requirements
- Customized solutions to suit your needs and budget



AUTOMATED RESISTANCE MEASUREMENT SYSTEMS

- Used extensively by a major military organization worldwide
- Complete primary resistance calibration lab in a rack
- Ratio 0.001:1 \sim 100:1
- Verification utility to check performance over its entire range
- Fully automated, plug and play
- Use 6634TS temperature stabilized traveling standard to import traceability
- Call Guildline to customize a solution to suit your needs



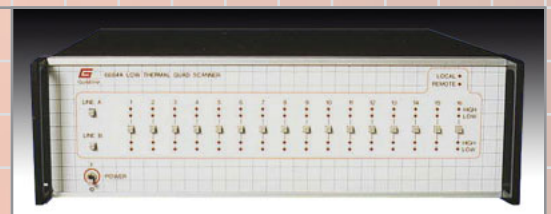
6623 DIRECT CURRENT COMPARATOR RANGE EXTENDER

- Extends bridges for precision measurements to $1 \mu\Omega$
- Current capability to 100A in 3 ranges
- Transformation ratio accuracy better than ± 0.5 to 1 ppm
- Internal reversing switch minimizes thermal EMFs



6664B LOW THERMAL QUAD MATRIX SCANNER

- True 4-terminal, 16-channel input, 2-channel output
- Gold flashed tellurium copper terminals
- $< 20 \text{ nV}$ thermal EMF
- Low leakage



DC RESISTANCE STANDARDS

6634A TEMPERATURE STABILIZED RESISTANCE STANDARD

- Entire set of primary standards in a box!
- Ultra stable internal temperature chamber eliminates oil baths
- Outstanding stability, < 2 ppm/year
- Ultra low temperature coefficients, ± 0.005 ppm/ $^{\circ}\text{C}$
- Models with 5 to 10 internal resistance standards available
- Standard resistance range $0.1 \Omega \sim 100 \text{M}\Omega$ decade values
- Internal PRT sensor for temperature monitoring
- Customer specified values available upon request



6634TS TEMPERATURE STABILIZED TRAVELING RESISTANCE STANDARD

- 4 Precision standards in a temperature controlled chamber
- Outstanding stability, < 1.5 ppm/year
- Temperature coefficient ± 0.005 ppm/ $^{\circ}\text{C}$
- Temperature regulation time using internal battery: 100 hours typical
- Standard values 1Ω , $10 \text{k}\Omega$, $1 \text{M}\Omega$ and $100 \text{M}\Omega$
- Suitable for importation of traceability, MAP, resistance audits and more
- Customer specified values available upon request



9334A SERIES PRECISION AIR RESISTANCE STANDARDS

- Widest range available from $1 \text{m}\Omega \sim 100 \text{G}\Omega$
- Ultra stable, < 2.5 ppm/year with no oil bath
- Ultra low temperature coefficient < 0.2 ppm/ $^{\circ}\text{C}$
- Wide operating range of 18°C to 28°C
- $1 \text{G}\Omega$ and $10 \text{G}\Omega$ direct plug-in models to Wavetek 1271/1281, HP 3458A and Fluke 8508A
- Temperature hysteresis: < 0.3 ppm between 0°C and 40°C
- Customer specified values available



9336 SERIES HIGH VALUE RESISTANCE STANDARDS

- Range $10 \text{M}\Omega$ to $100 \text{G}\Omega$
- Very high stability, as low as 10 ppm/year
- Low temperature coefficient, as low as 5 ppm/ $^{\circ}\text{C}$
- Low voltage coefficient
- Wide operating range of 18°C to 28°C in air
- Suitable for calibration of Teraohmmeters, Meggers and long scale DMMs
- 2-terminal device design



9337 SERIES ULTRA HIGH VALUE RESISTANCE STANDARDS

- Range $1 \text{T}\Omega$ to $10 \text{P}\Omega$
- Very high stability, as low as 500 ppm/year at $1 \text{T}\Omega$
- Low temperature coefficient, < 300 ppm/ $^{\circ}\text{C}$ at $1 \text{T}\Omega$
- Low voltage coefficient
- Wide operating range of 18°C to 28°C in air
- Suitable for calibration of Teraohmmeters
- 3-terminal device design



9330 SERIES CLASSIC STANDARD RESISTORS

- Range $0.1 \Omega \sim 100 \text{M}\Omega$
- Stability as low as 3.5 ppm
- Nominal accuracy to < 2.5 ppm
- Temperature coefficient < 2 ppm/ $^{\circ}\text{C}$
- Low thermal EMF design
- For use in oil temperature baths



DECADE STANDARDS

9340 SERIES PRECISION DECADE RESISTANCE STANDARDS

- Widest resistance range available from 10 mΩ to 10 TΩ
- Excellent application as a precision RTD simulator
- Best accuracy 0.01% with low zero resistance
- Excellent stability 10 ppm/year
- Very low temperature coefficients, as low as 5 ppm/°C
- 3 to 7 dial styles, 55 standard models
- Custom models available



LIONMOUNT PRODUCTS

- Decade resistance, capacitance and inductance
- Wide range of values
- Accuracy 1% and 0.1%
- Low cost



CURRENT SHUNTS

9230A SERIES PRECISION DC CURRENT SHUNTS

- Wide dynamic range 15 A to 1500 A models
- Accuracy at 100 Watts starting at 100 ppm
- Stability < 10 ppm/year
- Temperature coefficient < 4 ppm/°C
- Air or oil cooled, forced air convection accessory available
- Calibration at 3 power levels
- Small time constant, < 2 minutes for models to 500 A with forced air cooling



9200/9211A MULTIPLE DC RESISTOR/CURRENT SHUNT

- Use as multiple range resistance standards or current shunts
- 9200 as multiple precision standards from 0.01 Ω ~ 10 kΩ
- 9211A ideal for DC current measurement from 10 μA ~ 300 A
- Accuracy ±100 ppm
- Low temperature coefficient, as low as < 3 ppm/°C
- High stability < 10 ppm/year



7320 SERIES AC CURRENT SHUNTS

- True non-inductive 4-terminal design
- Resistance range from 10 mΩ to 10 kΩ
- Outstanding accuracy at ± 100 ppm
- Wide bandwidth, DC ~100 kHz
- 1 year stability < 200 ppm
- Temperature coefficient < 10 ppm/°C



AC INSTRUMENTS

7620 WIDE BAND TRANSCONDUCTANCE AMPLIFIER

- Widest frequency range from DC to 1 MHz
- Perfect for supporting Guildline 7320, Fluke A40 and other precision AC shunts
- Output ranges 200 μ A to 20 A, 8 A at 1 MHz
- Stability better than 10 ppm/hour at 30 kHz
- 10V high compliance voltage
- Overvoltage/overcurrent protection
- IEEE-488.2 interface



7410 AC VOLTAGE REFERENCE

- Multiple frequencies 1.16 MHz ~ 156.25 kHz
- Traceable calibration via a DC reference, to lower than 0.1 Hz
- Excellent for supporting low frequency AC calibration on long scale DMMs
- Nominal voltage 7.07Vrms, optional 1 mV, 10mV, 100mV and 1Vrms available
- Precision digitally synthesized AC reference
- Multiple waveforms, ramp, Sine wave, Sine wave with harmonics and more



THERMOMETRY

5030 SERIES VARIABLE TEMPERATURE AIR BATHS

- Chamber temperature 15°C to 50°C or 6°C below ambient
- Temperature stability better than $\pm 0.03^\circ\text{C}$ over 24 hours
- Large volume enclosure > 82 litres, uniform temperature gradient
- Fully EMI shielded
- 5032 fully programmable via IEEE-488.2 interface
- Perfect for calibrating temperature coefficients of standards and transducers
- Ideal for maintaining a controlled temperature environment



5010 PROGRAMMABLE FLUID BATH

- Wide range from -9.9°C ~ 65°C
- Excellent stability $< \pm 0.002^\circ\text{C}$
- Temperature set point resolution 0.001°C
- For use with a variety of fluids
- 50 Liters chamber capacity
- IEEE-488.2 and RS232, fully programmable



5150 PRECISION DUAL CHANNEL THERMOMETER

- Dual channel, accommodates SPRTs, PRTs/RTDs and thermistors, $0.25 \Omega \sim 10 \text{ k}\Omega$
- Wide measurement range: $-200^\circ\text{C} \sim 1000^\circ\text{C}$
- Low relative uncertainty: $< 5 \text{ ppm}$
- Resolution: 0.001°C
- Built-in math and statistics functions with graphical display
- User definable probe coefficients, ITS-90, IPTS-68, IEC751, logarithmic, or 5th order polynomial
- IEEE-488.2, RS232 and analog output



9540/9540B DIGITAL PLATINUM RESISTANCE THERMOMETER

- Single channel with a built-in temperature probe
- Wide measurement range $-180^\circ\text{C} \sim 600^\circ\text{C}$
- Outstanding stability and repeatability, $\pm 2 \text{ LSD}$
- Resolution: 0.001°C
- IEEE-488



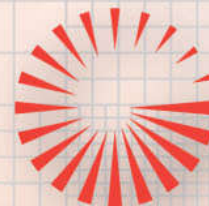
Providing Precision Measurement Solutions



Guidline Instruments manufactures and markets very high precision instruments for the fields of metrology and oceanography. Many of these instruments were and continue to be developed in conjunction with government research institutions such as the National Research Council of Canada (NRCC), the National Institute of Standards and Technology (NIST), the Bedford Institute of Oceanography (BIO), the Institute of Ocean Sciences (IOS) and other national standards laboratories and research establishments around the world.

Time Proven Technologies. Simplicity with Power.

Since it was founded in 1957, Guidline has repeatedly offered the metrology world unique and innovative solutions, such as the famous Direct Current Comparator Bridge and the Teraohmmeter. The team of Guidline engineering and manufacturing experts is often called upon to design and produce "one-of-a-kind" products for a variety of applications. Guidline also provides high echelon re-certification services, through its primary calibration laboratory in Canada. Customers range from national laboratories around the globe to industry leaders to military and defense organizations located in virtually every country. As one of the most recognized manufacturers, Guidline provides global support in warranty, repair, training and technical expertise, as well as calibration services through primary calibration laboratories.



GUILDLINE
INSTRUMENTS

*Calibration Standards and
Measurement Solutions*

Guildline Calibration Services

- Calibration to ISO/IEC17025
- Direct traceability to National Metrology Institutes (NMI)
- Lowest uncertainty levels for resistance calibration from 1uOhm to 10 POhm outside of NMIs
- Two weeks turnaround for most items
- Metrology and equipment training available
- Over four decades of expertise

Other Products

- Salinometer and oceanographic products
- Wattmeter
- AC/DC transfer standard
- Hamon transfer standard
- DC comparator potentiometer
- Precision current transformer
- Precision oil baths
- Special engineering design available
- For more – visit our website or contact Guidline directly

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