HIGH RESISTANCE MEASUREMENT ACCESSORIES

Complete Selection of Measurement Accessories for Your Teraohmmeters andTeraOhm-Bridge Meters!

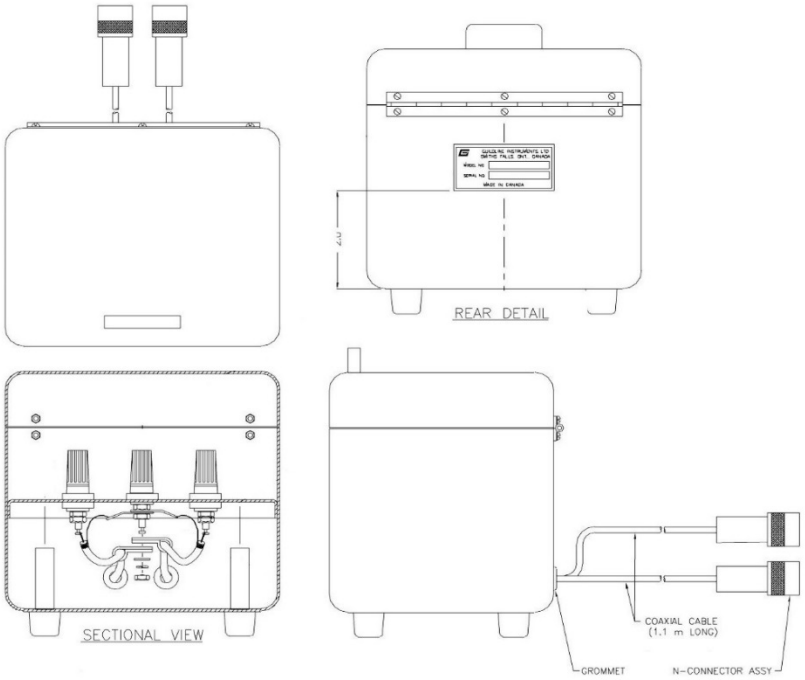
65326 Lead Set

The 65326 Lead set is used with either the 6530 TeraOhm-Bridge Meter Series or the 6520 Teraohmmeter. The connectors plug directly into the Source and Measure Connections, and provide a pair of banana jacks out. This is very convenient when connecting to devices such as a high resistance decade standard or any other standard that has a banana input. The standard lead length is 2 meters.

65201 PENN AIRBORNE (REFERENCE FIGURE 1)

The 65201 Penn Airborne enclosure allows the Penn Airborne series of High Value Resistors to be plugged directly in for ease of measurements by the 6530 or 6520. The connectors are plugged into the front of the 6530 or 6520. Since the Penn Airborne Resistors are susceptible to uncertainty contributions from environmental effects such as air flow and movement, this option is highly recommended if you calibrate these resistors.

Figure 1 - Penn Airborne Fixture



65220 Environmental Monitor

This option consists of two sensors that plug into the rear of the 6530 or 6520. One sensor measures temperature and humidity; the second sensor measures barometric pressure. The sensors convert a volt input into a full scale reading. The temperature, humidity and pressure readings can be accessed via the front panel of a 6530 or 6520 or via the TeraCal Software. The readings can also be time stamped.

Figure 2

Combined Temperature/Humidity Sensor (Reference Figure 2 and Figure 3)

The Temperature/Humidity Sensor construction consists of a planar capacitor with a second polymer layer to protect against dirt, dust, oils and other hazards.

The Temperature Sensor uses a precision integrated-circuit whose output voltage is linearly proportional to the Celsius (Centigrade) temperature. The sensor thus has an advantage over linear temperature sensors calibrated in °Kelvin, as the user is not required to subtract a large constant voltage from its output to obtain convenient Centigrade scaling.

The sensor does not require any external calibration or trimming to provide typical accuracies of ± 0.25 °C at room temperature and ± 0.75 °C over a full -55 °C to +150 °C temperature range. The low output impedance, linear output, and precise inherent calibration make interfacing to readout or control circuitry especially easy. As it draws only 60 µA from it's supply, it has very low self-heating, less than 0.1 °C in still air. The sensor is rated to operate over a -5 °C to +150 °C temperature range.

Humidity Sensor Specifications	
Accuracy	± 2 % RH, 0 - 100 % RH Non-Condensing, 25 °C
Range RH	0 to 100 % RH, Non-Condensing
Range Temperature	-40 °C to 85 °C (-40 °F to 185 °F)
Interchangeability	± 5 % RH, 0 - 60 % RH; ± 8 % @ 90 % RH Typical
Hysteresis	± 1.2 % of RH Span Maximum
Linearity	± 0.5 % RH Typical
Repeatability	± 0.5 % RH
Response Time	15 s in Slowly Moving Air @ 25 °C
Stability	± 1 % RH Typical at 50 % RH in 5 Years

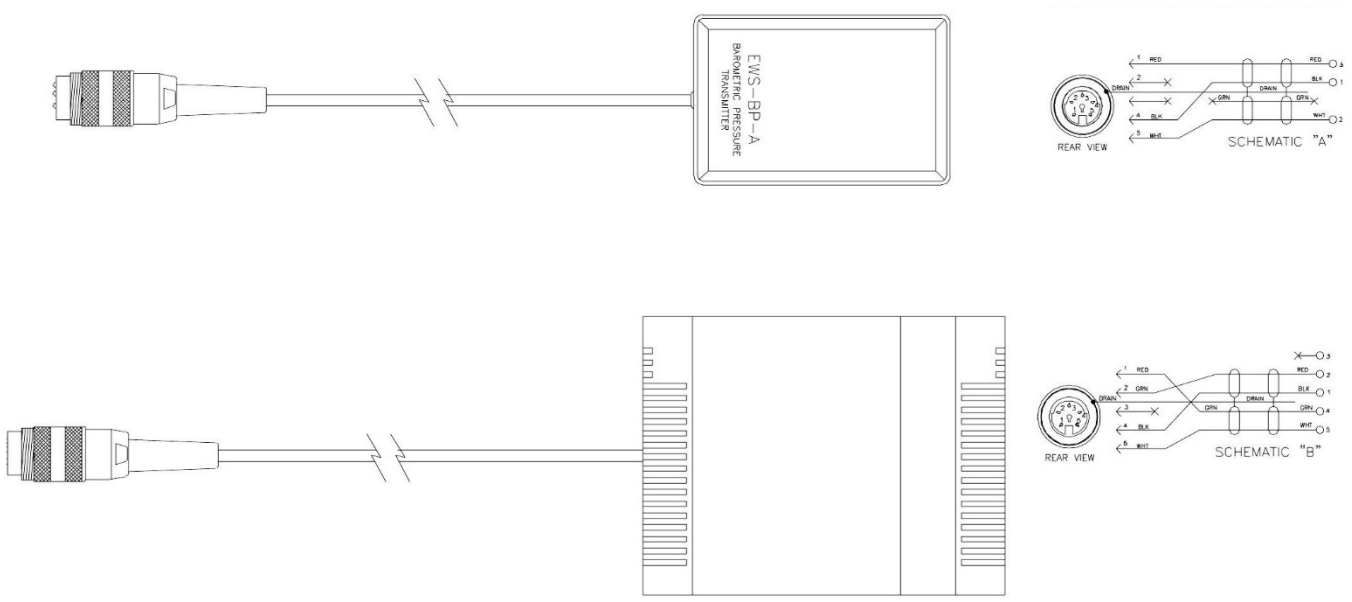
Temperature Sensor Specifications	
Stability (Room)	± 0 .25 °C at Range of 20 °C to 30 °C
Stability Range	± 0.55 °C at Range of -55 °C to +150 °C
Self Heating Effects	± 0 .1 °C Ambient Air

Temperature Compensation: True RH = Sensor RH/(1.0546-0.00216T) T in °C (True RH = Sensor RH/(1.093-0.0012T) T in °F.

Note: The Temperature Compensation is NOT factored in with the humidity displayed on the Standard used.

65220 ENVIRONMENTAL MONITOR (CONTINUED)

Figure 3 – Temp/Humidity and Pressure Sensor Layout



Pressure Sensor (Figure 4)

The piezo resistive transducer used in the pressure sensor is a state–of–the–art monolithic silicon pressure sensor designed for a wide range of applications, but particularly those employing a microcontroller or microprocessor with A/D inputs.

This patented, single element transducer combines advanced micromachining techniques, thin–film metallization, and bipolar processing to provide an accurate, high level analog output signal that is proportional to the applied pressure.

Integrated Pressure Sensor Specifications

0 to 100 kPa (0 to 14.5 psi): 15 to 115 kPa (2.18 to 16.68 psi)
0.2 to 4.7 Volts Output

Figure 4
Pressure Sensor

65221 Surface Volume Resistivity Test Fixture (Reference Figures 5A and 5B)

This optional accessory allows the 6530 or 6520 user to make a direct measurement of volume resistivity up to 10^{18} Ω/cm (on samples 0.1 cm thick) and surface resistivity up to 10^{17} Ω/square cm, in accordance with ASTM procedures. The test fixture is supplied with all the necessary interconnect cables for the 6530 and 6520. A simple series of keystrokes on the 6530 or 6520 front panel starts the measurement process.

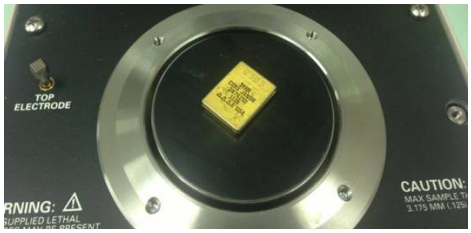


Figure 5A

Figure 5B

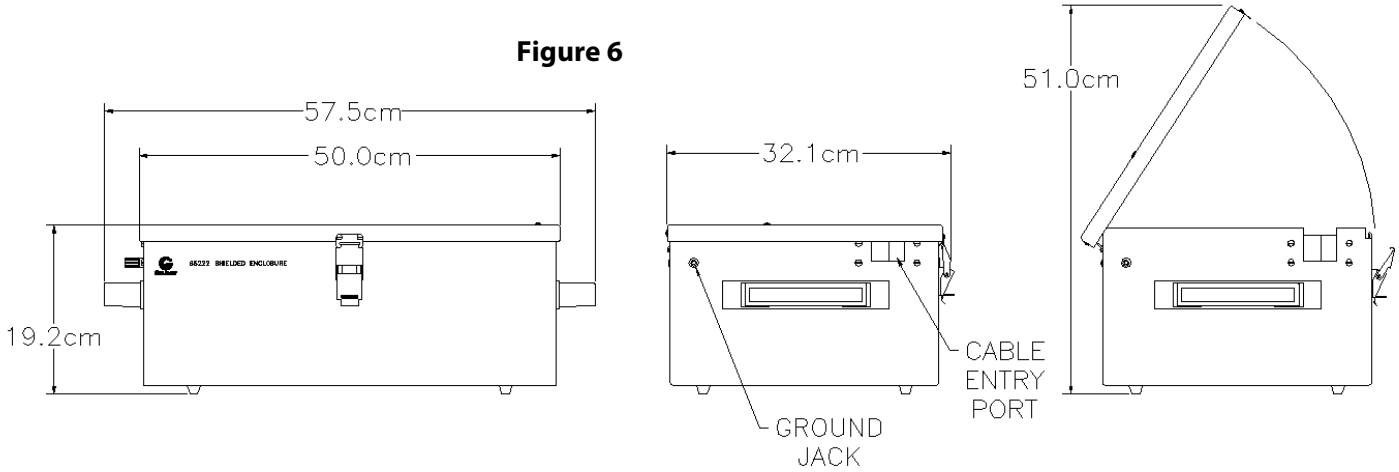
Resistivity Fixture Device Data:

Operating Temperature: –30 °C to +85 °C
Operating Humidity: 65 % R.H. (up to 35 °C, de-rate 3 % R.H./°C above 35 °C)
Storage Temperature: –25 °C to +85 °C
Dimensions: 108 mm high × 165 mm wide × 140 mm deep (4 1/4 in × 6 1/2 in × 5 1/2 in)
Weight: 1.45 kg (3.19 lbs)

65222 Large Sample Enclosure (Reference Figure 6)

The 65222 Large Shielded Sample Enclosure is designed to eliminate environmental effects such as air flow, fast temperature changes, EMI, and others. The large size of this enclosure will accommodate a wide variety of devices, such as Guildline's 100 TΩ, 7 dial decade standard (i.e. 9347-100T). A side cable entry port allows for the 6530 or 6520 cables to be inserted into the enclosure while the lid is closed.

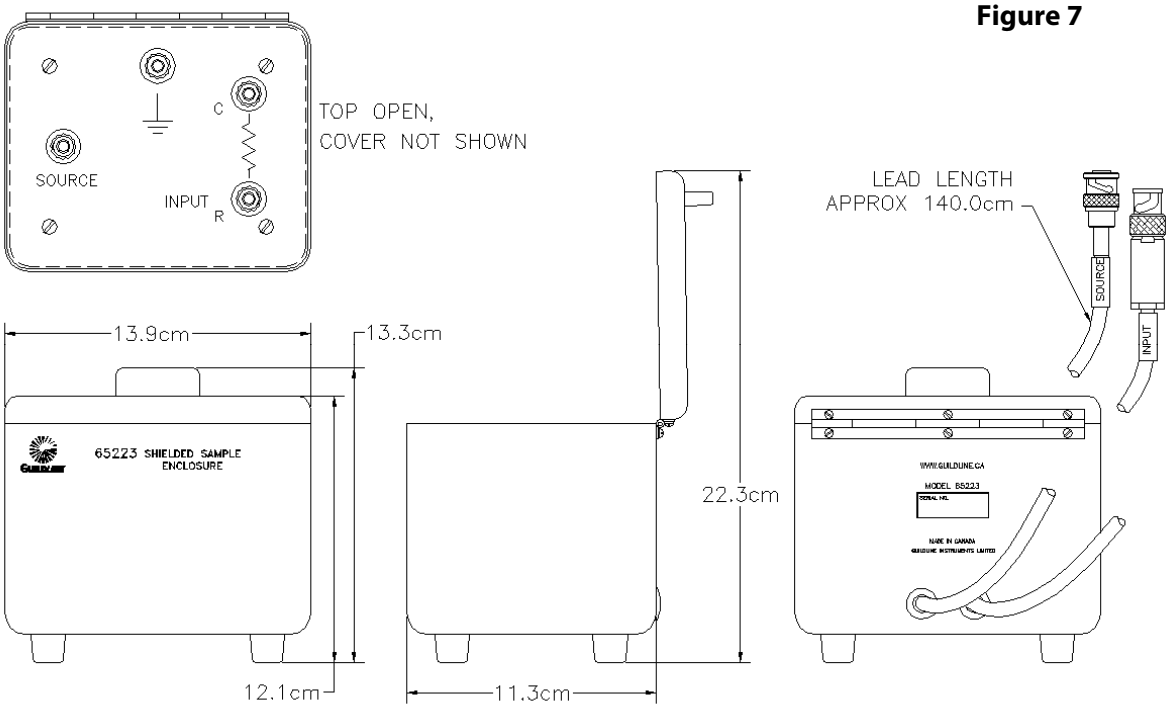
Figure 6



65223 Shielded Sample Enclosure (Reference Figure 7)

The Model 65223 Small Enclosure provides a stable shielded environment for measuring high resistances and the leakage resistance of capacitors. The sample capacitor should be connected between the "Source" and "C" terminals. This inserts a 10 Mega ohm resistor in series with the Capacitor to limit inrush currents.

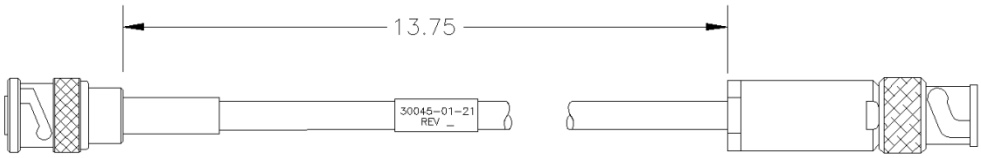
Figure 7



Model 65224 Zero Link (Reference Figure 8)

The 65224 Zero Link is shown in Figure 8. Note that the 65224 Zero Link is also included in the 65226 Calibration Kit parts.

Figure 8



Model 65225 Lead Set

The 6530 and 6520 include a cable that has a MHV End (connects to 6530 or 6520 Source Input) to a Male "N" connector which is the standard input for the Guildline 9336 and 9337 Source (Female "N" Connection). The 6530 and 6520 standard cable set also includes one cable with a Triax End (Connects to 6530 or 6520 Input) to Male "N" type cable which is the standard input for the Guildline 9336 and 9337 "Output" connections. The 65225 lead set includes the following additional cables, connectors and adaptors.

65225 Lead Set part Numbers

Qty	Part Number	Description
1	30053-02-21	1.8 m Coax Cable - MHV M to Type N, F
1	30054-02-21	1.8 m Triax Cable – M to Type N F
1	30055-01-21	1.8 m Coax Cable – MHV M Both Ends
1	30046-01-21	1.8 m Cable – MHV M to Plug
1	054-20504	Alligator Clip, Red
1	054-20505	Alligator Clip, Black
1	997-09223	0.9 m Cable, Triax M to Alligator
1	997-09224	0.9 m Cable, Triax M to Triax M
1	003-23237	Adapter, Triax F to Triax F

Model 65226 Calibration Kit

The 65226 Calibration Kit consists of the following components. Note that this kit includes a 9936-100M Resistance Standard and the 65224 Zero Link.

65226 Calibration Kit Parts listing

Qty	Part Number	Description
1	30046-01-21	Cable, MHV M to Plug 1.8 m
1	20020.03.40	9336/100M Standard Resistor
1	30045-01-21	65224 Zero Link
1	30007-01-65	Calibration Procedure 6520 or 6530
1	GI2003002A	Application Note 6520
1	022-01213	Case

The Guildline 9336 series of Resistance Standards are designed as very high stability calibration laboratory standards for accurate resistance calibration in air, between 10 MΩand 10 PΩ.

The resistor elements are securely mounted to the inside of a rugged hermetically sealed, shielded, aluminium enclosure. A pair of input/output Type N connectors provide the termination for the standard. The "SOURCE" connector connects to the power supply from the measurement system, while the "OUTPUT" connector connects to the "INPUT" of the measurement system.

6636 Temperature Stabilized Resistance Standards

The 6636 contains specified values from 100 MΩ to 100 TΩ in a specially designed, EMI shielded and temperature controlled environment. This stabilized environment greatly reduces uncertainties associated with temperature effects and EMI, thus materially improving the stability of the resistive elements. The 6636 Standard can be used in an operating environment of 23 °C ± 5 °C.

Ordering Information	
65326	MHV, Modified Triax to Male Banana Jacks
65201	Penn Airborne Adapter
65220	Environmental Monitor Set
65221	Surface/Volume Resistivity Test Fixture
65222	Large Shielded Sample Enclosure
65223	Small Shielded Sample Enclosure
65224	Zero Link
65225	Lead Set
65226	Calibration Kit
6636	Temperature Stabilized Resistance Standard
9336-x	Standard Resistor (Specify Value 10 MΩ to 100 GΩ
9337-x	Standard Resistor (Specify Value 1 TΩ to 1 PΩ

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