













Precision Measurement Lead Set

8000LEAD

		Unshrouded COAX Leads x2
		Red Retractable Shroud Leads x2
		Black Retractable Shroud Leads x2
		Yellow Retractable Shroud Leads x1
		BNC Electrometer Mode Leads x2
		Black Spade Adapter x2 Red Spade Adapters x2
		Carry Case x1

Overview

A collection of test leads and adapters is provided to cover requirements from low level DC through to high current and high resistance measurements.

The lead set is provided in a sturdy plastic carry case for safe storage and transportation

The leads and materials supplied in this measurement set have been carefully selected to minimise connection/lead errors. The safety of the leadset is ensured by the use of non-retractable shrouded connectors for the voltage test lead set removing the risk of accidental electric shocks. All current leads feature retractable shrouds for connecting to both sockets and binding posts.

The leads are stackable to allow connections to be commoned together where required, enabling fast calibration of instruments with minimal lead changes required.

Low Thermal Gold Plated Connections





The use of gold plated connectors is essential to reduce thermally generated EMFs caused by temperature differences across metal junctions (i.e. thermocouple type effects). Gold connections, which produce less than $0.2\mu\text{V}/^{\circ}\text{C}$, are used as opposed to nickel plated brass which can produce in excess of $15\mu\text{V}/^{\circ}\text{C}$. This allows typical uncertainty contributions from this type of leadset to be in the order of $0.7\mu\text{V}$.


To learn more about Thermal EMF effects on test leads and connections, please view our YouTube video at the following link : <http://youtu.be/KiYhEP6m7Pc>

Low resistance 32A current leads

The lead set provided for high current measurement is manufactured using very low resistance cable and connectors. Low resistance is essential to carry current without excessive heating effects or voltage drop. As there are no errors introduced by thermal effects connectors are made from hard wearing nickel plated brass. Retractable shroud type connectors are used as there is no potential for shock.

Test Lead Set Specifications


<p>Voltage Measurement Leads</p> 	<p>2 pairs of COAX leads fitted each end with low thermal 4mm unshrouded terminals.</p> <table border="0"> <tr> <td>Plating</td> <td>Gold</td> </tr> <tr> <td>Length</td> <td>1m</td> </tr> <tr> <td>Rating</td> <td>1000VAC</td> </tr> <tr> <td>Thermal Effect</td> <td>0.7uV</td> </tr> </table>	Plating	Gold	Length	1m	Rating	1000VAC	Thermal Effect	0.7uV
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<p>Voltage Measurement Adapters</p>									
<p>4mm plug to spade adapters</p> 	<p>2 pairs of low thermal (gold plated) Black & Red 4mm plug to spade adapters suitable for connection to standard resistors etc.</p> <p> 1000VAC rating does not apply when using these spade adapters due to electric shock hazard</p>								
<p>Recommended use of voltage measurement leads</p> <ul style="list-style-type: none"> • DC voltage measurements up to 1000V. • Combine with low current leadset and spade adapters - ideal for 4-wire kelvin measurements. <p>As these are unscreened, they are not suitable for high value resistance or low AC voltage & current.</p> <p> It is important to remember that the terminals of mains powered instrument may be warm, or above ambient temperature. The test leads will almost certainly be at ambient (room) temperature and connecting these leads to a mains powered instrument will cause a significant 'cold-junction'. This will require a period of time before the temperature variation stabilises between the instrument terminals and the leadset.</p>									

<p>Current Measurement Leads</p> 	<p>2 pairs of Black & Red leads fitted each end with 4mm retractable shroud safety terminals.</p> <table border="0"> <tr> <td>Plating</td> <td>Nickel plated brass</td> </tr> <tr> <td>Length</td> <td>1m</td> </tr> <tr> <td>Rating</td> <td>150VAC / 16A</td> </tr> </table>	Plating	Nickel plated brass	Length	1m	Rating	150VAC / 16A
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Length	1m						
Rating	150VAC / 16A						

Recommended use of current Measurement Lead

- AC/DC current measurements from 1mA up to 2A.


This leadset can be used at lower currents, however to reduce noise / pickup use the BNC to BNC lead.

<p>High Current Measurement Leads</p> 	<p>1 Yellow leads fitted each end with 4mm retractable shroud safety terminals.</p> <table border="0"> <tr> <td>Plating</td> <td>Nickel plated brass</td> </tr> <tr> <td>Length</td> <td>1m</td> </tr> <tr> <td>Rating</td> <td>150VAC / 32A</td> </tr> </table>	Plating	Nickel plated brass	Length	1m	Rating	150VAC / 32A
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Length	1m						
Rating	150VAC / 32A						

Recommended use of current measurement Lead

- AC/DC current measurements from 2A up to 30A

This lead is not suitable for low DC measurements due to thermal EMFs created by the contact material used.

<p>BNC connection</p> <p>High resistance measurements via Electrometer connection</p> 	<p>1 coax lead fitted each end with BNC connectors</p> <table border="0"> <tr> <td>Plating</td> <td>Silver</td> </tr> <tr> <td>Length</td> <td>1m</td> </tr> <tr> <td>Rating</td> <td>300V AC / 0.5A</td> </tr> </table>	Plating	Silver	Length	1m	Rating	300V AC / 0.5A
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Length	1m						
Rating	300V AC / 0.5A						

Recommended use of BNC lead

- High resistance (1Mohm and above)