

Application Note

7660 and 7600 Series Connections to the LD3 Dielectric Cell

The IET Labs 7660 and 7600 Series Precision LCR Impedance Meters are often used with dielectric cells to make accurate and rapid measurements on dielectric materials. Figure 1 illustrates how to connect the 7600 unit to the 3-terminal (guarded) LD3 cell manufactured by Dielectric Products Company. This method uses the standard extender cables available for the 7660 LCR Meter. For permanent installations it may be preferable to modify the cables for cleaner more repeatable connections. It is also recommended to make the cables as [short](#) as possible, especially for higher frequency measurements.

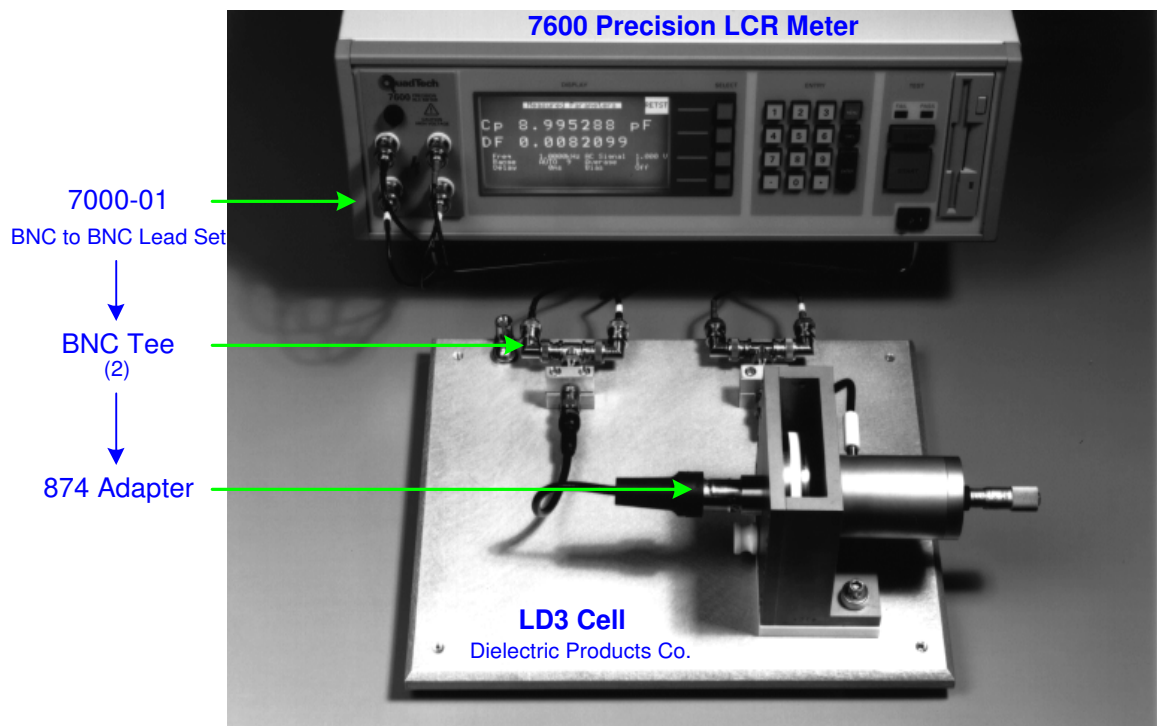


Figure 1: Connection LD3 Cell to 7000 Series LCR Meter

The LD-3 Rigid Dielectric Cell is designed for testing rigid flat materials. Material up to 8cm (3-1/8 inches) with a maximum thickness of 1.1 cm (7/16 inch) can be used in the dielectric cell. The dielectric cell is made up of two electrodes. One electrode is fixed with a grounded guard ring and the other is movable via a micrometer. The micrometer allows precise measurement of electrode spacing. The grounded guard ring reduces fringe effects to improve measurements.

The three terminal electrical connections are made via GR-874 connection on the fixed electrode side (optional BNC to GR-874 adapter, LD-08 is available) and banana connection LD-05, Pomona

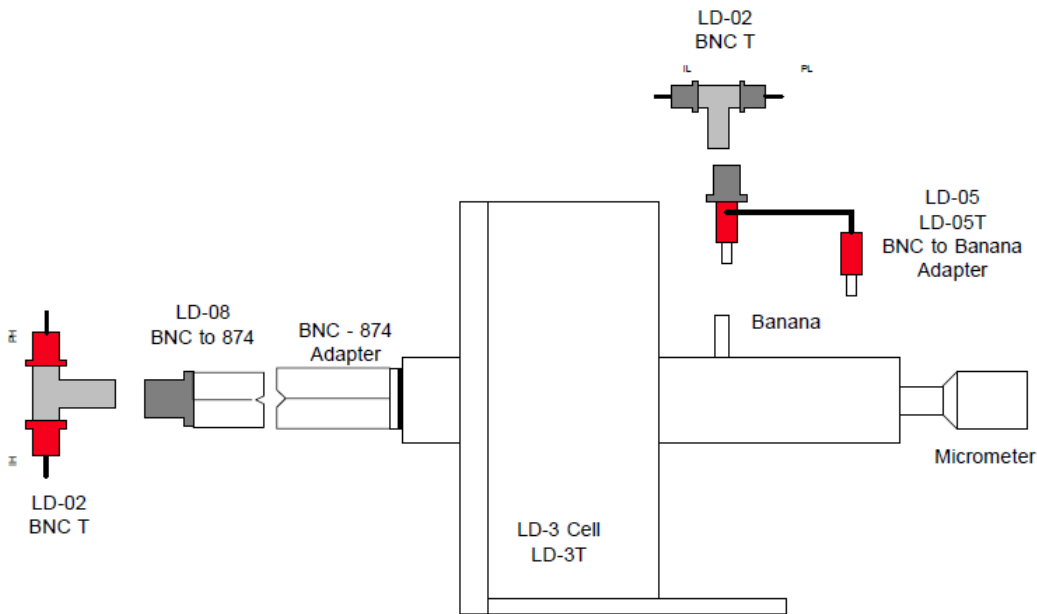
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Electronics 4684, on the movable electrode side. A 1 Meter BNC to BNC-T cable set 1689-9602 is available for connection to the cell.

Parts required for connection are shown below in Table 1.

Part Number	Description
LD-02	BNC Tees
1689-9602	1 Meter BNC Cable Set
LD-05	BNC to Banana Adapter
LD-08	GR874 Adapter

Table 1 Accessories for LD-3



Parts Diagram

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Open & Short Compensation

It is very important to perform an OPEN and SHORT circuit zero with the instrument before making measurement. Figure 3 illustrates the preferred method to accomplish short. The BNC Ts should be connected together to perform short compensation. This can be done with another BNC T or barrel connector.

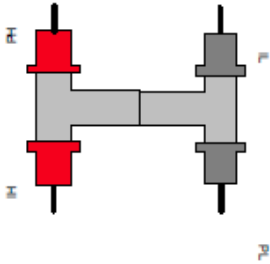


Figure 2: Cable Lead Position for Short Compensation

Figure 4 illustrates the preferred method to accomplish open compensation. Note that the connection to the movable electrode should not be made during open compensation. The movable electrode in the cell should be adjusted for maximum distance between the electrodes.

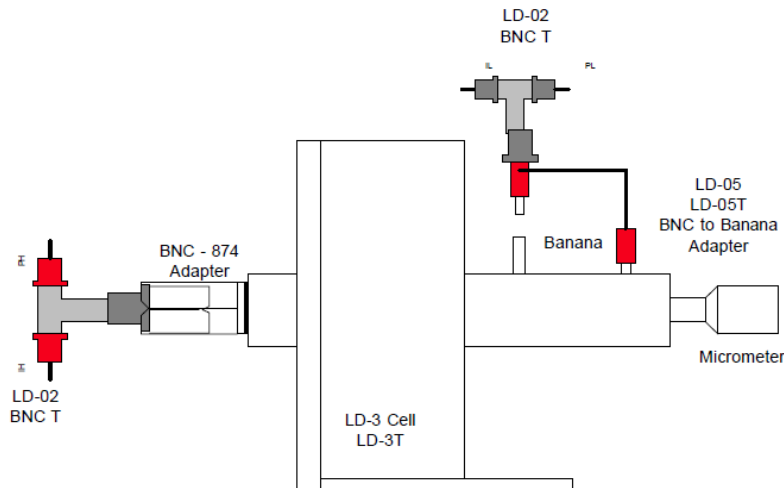
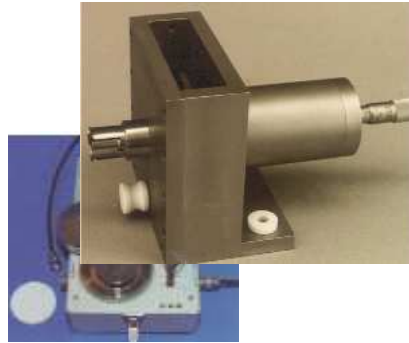


Figure 3: Cable Lead Position for Open & Short Compensation

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Available from IET Labs,

High Temperature Cell LD-3T
High Temperature Cable Set
Teflon Standard TS-100
Liquid Cell 350
Powder and Paste Cell MC-100
Resistivity Cell 1865-11



For complete product specifications on the 7660 Precision LCR meters or any of IET's products, visit us at www.ietlabs.com or email your questions to sales@ietlabs.com

