

Keithley Instruments  
28775 Aurora Road  
Cleveland, Ohio 44139  
1-800-833-9200  
[tek.com/keithley](http://tek.com/keithley)

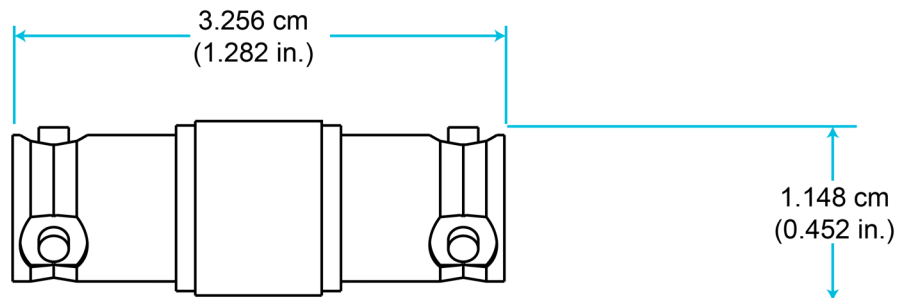
## Female-Female Barrel Connector Instructions

### Description

The Keithley Instruments TRX-1100V-FFBARREL is a 3-lug female-barrel adapter rated for 1100 V. The two female connectors of this adapter will only mate with 3-slot male triaxial connectors (Keithley part number TRX-1100V-CONN) and cables (Keithley part number TRX-1100V-\*) that meet the safety standards for spacing.

This connector can be used in applications that use the Keithley Instruments Model 2470 High Voltage SourceMeter® Instrument. It is intended for instrument testing that requires high voltage and high throughput combined with DC measurement capability and broad testing flexibility.

**Figure 1: Triaxial 1100 V female-female barrel connector**



## Specifications

### Material:

- Brass with nickel plated body
- Beryllium copper with gold and nickel-plated center conductor
- Brass with gold and nickel-plated inner shield
- Teflon insulators

### Electrical:

Voltage rating:

- Center contact to inner shield: 707 V dc
- Center contact and inner shield to outer shell: 1500 V dc

Contact resistance:

- Center contact: 2.0 m $\Omega$
- Inner shield: 1.0 m $\Omega$
- Outer shell: 0.5 m $\Omega$

Insulation resistance (measured using an electrometer with the alternating polarity method at 500 V with a one-minute delay):

- Center to guard: 1 x 10<sup>14</sup>  $\Omega$
- Guard to shell: 1 x 10<sup>12</sup>  $\Omega$

Dielectric withstand voltage:

- Center contact to inner shield: 2121 V dc
- Center contact and inner shield to outer shell: 2913 V dc

### Temperature rating:

- -65 °C to 165 °C

### Force to engage or disengage:

- Longitudinal 1.814 kg (4 lb) maximum
- Torque 0.28 N-m (2.5 in. lb) maximum

The following safety precautions should be observed before using this product and any associated instrumentation. Although some instruments and accessories would normally be used with nonhazardous voltages, there are situations where hazardous conditions may be present.

This product is intended for use by personnel who recognize shock hazards and are familiar with the safety precautions required to avoid possible injury. Read and follow all installation, operation, and maintenance information carefully before using the product. Refer to the user documentation for complete product specifications.

If the product is used in a manner not specified, the protection provided by the product warranty may be impaired.

The types of product users are:

**Responsible body** is the individual or group responsible for the use and maintenance of equipment, for ensuring that the equipment is operated within its specifications and operating limits, and for ensuring that operators are adequately trained.

**Operators** use the product for its intended function. They must be trained in electrical safety procedures and proper use of the instrument. They must be protected from electric shock and contact with hazardous live circuits.

**Maintenance personnel** perform routine procedures on the product to keep it operating properly, for example, setting the line voltage or replacing consumable materials. Maintenance procedures are described in the user documentation. The procedures explicitly state if the operator may perform them. Otherwise, they should be performed only by service personnel.

**Service personnel** are trained to work on live circuits, perform safe installations, and repair products. Only properly trained service personnel may perform installation and service procedures.

Keithley products are designed for use with electrical signals that are measurement, control, and data I/O connections, with low transient overvoltages, and must not be directly connected to mains voltage or to voltage sources with high transient overvoltages. Measurement Category II (as referenced in IEC 60664) connections require protection for high transient overvoltages often associated with local AC mains connections. Certain Keithley measuring instruments may be connected to mains. These instruments will be marked as category II or higher.

Unless explicitly allowed in the specifications, operating manual, and instrument labels, do not connect any instrument to mains.

Exercise extreme caution when a shock hazard is present. Lethal voltage may be present on cable connector jacks or test fixtures. The American National Standards Institute (ANSI) states that a shock hazard exists when voltage levels greater than 30 V RMS, 42.4 V peak, or 60 VDC are present. A good safety practice is to expect that hazardous voltage is present in any unknown circuit before measuring.

Operators of this product must be protected from electric shock at all times. The responsible body must ensure that operators are prevented access and/or insulated from every connection point. In some cases, connections must be exposed to potential human contact. Product operators in these circumstances must be trained to protect themselves from the risk of electric shock. If the circuit is capable of operating at or above 1000 V, no conductive part of the circuit may be exposed.

Do not connect switching cards directly to unlimited power circuits. They are intended to be used with impedance-limited sources. NEVER connect switching cards directly to AC mains. When connecting sources to switching cards, install protective devices to limit fault current and voltage to the card.

Before operating an instrument, ensure that the line cord is connected to a properly-grounded power receptacle. Inspect the connecting cables, test leads, and jumpers for possible wear, cracks, or breaks before each use.

When installing equipment where access to the main power cord is restricted, such as rack mounting, a separate main input power disconnect device must be provided in close proximity to the equipment and within easy reach of the operator.

For maximum safety, do not touch the product, test cables, or any other instruments while power is applied to the circuit under test. ALWAYS remove power from the entire test system and discharge any capacitors before: connecting or disconnecting cables or jumpers, installing or removing switching cards, or making internal changes, such as installing or removing jumpers.

Do not touch any object that could provide a current path to the common side of the circuit under test or power line (earth) ground. Always make measurements with dry hands while standing on a dry, insulated surface capable of withstanding the voltage being measured.