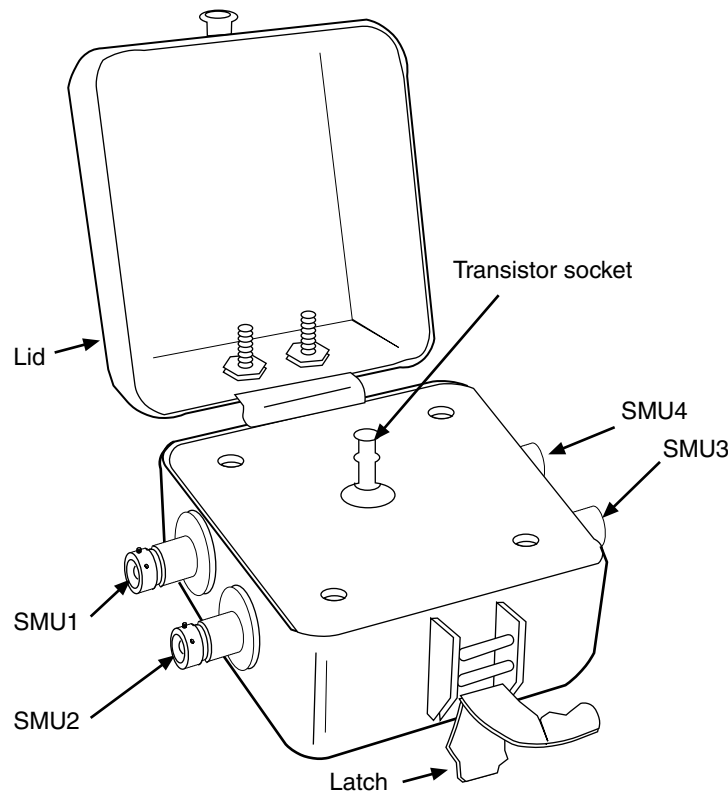


## Overview

**WARNING** The procedures contained in this User's Guide are intended for use by qualified service personnel only. Do not perform these procedures unless qualified to do so. Failure to recognize and observe normal safety precautions could result in personal injury or death.

The 8101-4TRX test fixture is a metal case with four female triaxial connectors (SMU1–4) and a latch on the outside (see [Figure 1](#)). Inside the test fixture is one 4-pin device holder (transistor socket). The inner conductor of each triax connector is wired to the closest pin on the 4-pin device holder (see Specifications at the end of this document). The inner shield of the triax connectors are “no connects.” The triax connectors’ outer shield is connected to the test fixture’s metal case.

*Figure 1*  
**Test fixture**



# General definitions



The types of product users are:


**Responsible body** is the individual or group responsible for the use and maintenance of equipment, 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, for example, setting the line voltage or replacing consumable materials. Maintenance procedures are described in the manual. 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, and perform safe installations and repairs of products. Only properly trained service personnel may perform installation and service procedures.

If  or  is present, connect it to safety earth ground using the wire recommended in the user documentation.

The  symbol on an instrument indicates that the user should refer to the operating instructions located in the manual.

The  symbol on an instrument shows that it can source or measure 1000 volts or more, including the combined effect of normal and common mode voltages. Use standard safety precautions to avoid personal contact with these voltages.

The **WARNING** heading in a manual explains dangers that might result in personal injury or death. Always read the associated information very carefully before performing the indicated procedure.

The **CAUTION** heading in a manual explains hazards that could damage the instrument. Such damage may invalidate the warranty.

## Operation and use

**WARNING** There can be hazardous voltages exposed in this test fixture and risk of electric shock. Do not touch internal electrical connections. Remove all sources of power before opening cover and changing devices.

If this test fixture is used with an instrument capable of sourcing voltages greater than 42V, then the user must provide an additional safety barrier to prevent the possibility of electrical shock.

No interlock features are provided by this device—properly make all connections and close the lid before energizing instrumentation connected to this test fixture.

**CAUTION** The current leakage specifications depend upon a clean fixture. Avoid contamination that could cause degraded performance and increase current leakages beyond specified limits.

**NOTE** It is safe to use the test fixture without an additional safety barrier if the connected instrument has a Safety Interlock that can disable any high voltage ranges capable of sourcing greater than 42V, such as the Keithley Model 4200.

## To operate and use

1. Place a 2, 3, or 4 terminal device on the device holder.
2. Note which device pin (from Step 1) is associated with the triax connection (SMU1, SMU2, SMU3, SMU4).  
Then for:
  - Model 4200 — Connect the appropriate SMU from the Model 4200 directly into each triax connector.
  - Other instruments — Adapt the connections to triax (if needed). Make sure HI is connected to the inner conductor.
3. Close the lid on the test fixture.

**WARNING** Close cover before applying power to fixture.

4. Conduct your test.

## Handling and cleaning

When inserting or removing a component from the test connector, use care not to touch the PC board or socket. This will help avoid contamination from body oils or other foreign matter. The current leakage specifications depend upon a clean fixture. Contamination could cause degraded performance, which might increase current leakages beyond specified limits.

### Handling

Observe the following precautions when handling components:

- Wear cotton gloves.
- Avoid unnecessary touching of the test connector and PC board.

### Cleaning

To clean the test fixture:

- Swab the test connector and PC board area with methanol.
- Quickly dry the test connector after cleaning by directing dry nitrogen gas over the PC board area.
- After cleaning, allow the test fixture to dry in a 50°C, low-humidity environment for one hour.

# 8101-4TRX 4-Pin Transistor Fixture Specifications

## CAPABILITIES

**Device Socket Configuration:** 4-pin gold plated, Teflon transistor socket.

**Connector Type:** 4 independent Triax connectors, center pin to device socket, no connect to guard (center shield).

**Maximum Signal Voltage:** 42V peak, signal or guard to any signal or chassis.

**Maximum Signal Current:** 1.05A peak.

**Maximum Signal Power:** 1W, maximum power dissipation in test fixture.

**Offset Current:** 1pA maximum. (0-50°C, non-condensing at 60% R.H. up to 35°C)

**Path Isolation Resistance:** >1TΩ typical. (18-28°C, non-condensing at 60% R.H.)

**Path Resistance:** <1Ω.

**Socket Lead Diameter:** 0.41mm/0.016" to 0.51mm/0.020"

**Accessories Available:**

**CAP-31**

**4200-TRX-2 Ultra-Low Noise PreAmp Triax Cable**

(Also available in 1m and 3m lengths)

**4200-MTRX-2 Ultra-Low Noise SMU Triax Cable**

(Also available in 1m and 3m lengths)

## GENERAL SPECIFICATIONS

**OPERATING ENVIRONMENT:** 0°C to 50°C, non-condensing at 60% R.H. up to 35°C.

**STORAGE ENVIRONMENT:** -20°C to +70°C.

**WARRANTY:** 1 Year.

**EMC:** N/A, no active parts.

**SAFETY:** Conforms to European Union Directive 73/23/EEC EN61010-1, CAT I.

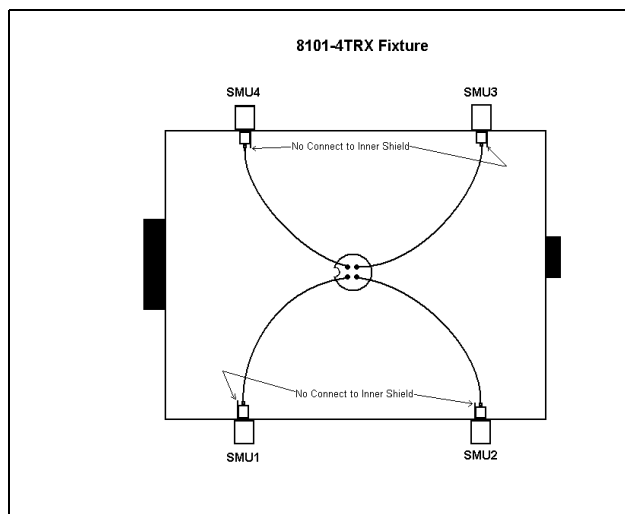
**VIBRATION:** MIL-PRF-28800F Class 3, Random.

**DIMENSIONS:** 94.5(3.72) L x 87.6 (3.45) W x 55.6 (2.19) H mm(in).

**NET WEIGHT:** 5.7oz.

**SHIPPING WEIGHT:** 1lb.

## WIRING DIAGRAM



RKN 8/14/02  
Rev. A