

Keithley Instruments, Inc.
28775 Aurora Road
Cleveland, Ohio 44139
1-888-KEITHLEY
<http://www.keithley.com>

Safety Supplement**Introduction**

The purpose of this supplement is to provide you with basic installation, front panel, and rear panel information to help you start using your Keithley Instruments Series 2600B instrument safely.

For detailed information about these topics, refer to the Reference Manual on the Product Information CD-ROM that came with your instrument.

General ratings

The Series 2600B instrument's general ratings and connections are listed in the following table.

Category	Specification
Supply voltage range Models: 2601B/2602B/2604B	100 V AC to 240 V AC, 50 Hz or 60 Hz (autosensing); 240 VA maximum.
Supply voltage range Models: 2611B/2612B/2614B 2634B/2635B/2636B	100 V AC to 240 V AC, 50 Hz or 60 Hz (autosensing); 250 VA maximum.
Input and output connections	See Front panel (on page 3) and Rear panel (on page 7).
Environmental conditions	<p>For indoor use only:</p> <p>Altitude: Maximum 2000 meters (6562 feet) above sea level.</p> <p>Operating: 0 °C to 50 °C (32 °F to 122 °F), 70 % relative humidity up to 35 °C. Derate 3 % relative humidity/°C, 35 °C to 50 °C (95 °F to 122 °F). Power output is derated by one watt per channel for each degree Celsius above 30 °C (86 °F) up to 50 °C (122 °F) and at up to 70 % relative humidity.</p> <p>Storage: -25 °C to 65 °C (-13 °F to 149 °F).</p> <p>Maximum mains transient overvoltage category II.</p> <p>Terminals shall not be used for measurements within the measurement categories CAT II, CAT III, and CAT IV. Input measurement terminals shall also be protected from drawing more than maximum rated current when connecting to an external source.</p> <p>Pollution degree: 1 or 2.</p>

Electrical rating**Source input**

	Models: 2601B, 2602B, and 2604B	Models: 2611B, 2612B, 2614B, 2634B, 2635B, and 2636B
Voltage	40 V DC maximum	200 V DC maximum
Current	3 A maximum at 6 V DC, 1 A maximum at 40 V DC	1.5 A maximum at 20 V DC, 0.1 A maximum at 200 V DC



Measuring input

	Models: 2601B, 2602B, and 2604B	Models: 2611B, 2612B, 2614B, 2634B, 2635B, and 2636B
Voltage	40 V DC maximum HI to LO, 250 V DC LO to ground	200 V DC maximum HI to LO, 250 V DC LO to ground
Current	3 A maximum at 6 V DC, 1 A maximum at 40 V DC	1.5 A maximum at 20 V DC, 0.1 A maximum at 200 V DC
Impedance	Variable	Variable

Requirements**Supply connection and grounding requirements**

Before operating an instrument, ensure that the line cord is connected to a properly grounded, appropriately rated 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.

Assembly, location, and mounting requirements

The Series 2600B System SourceMeter instruments® can be mounted in a standard 19-inch rack (horizontal mountings only; mounting vertically may impede the cooling mechanisms).

When rack mounting the Series 2600B, make sure there is adequate airflow around at least one side to ensure proper cooling. Adequate airflow enables air temperatures within approximately one inch of the Series 2600B surfaces to remain within specified limits under all operating conditions. The cooling specifications state:

- Forced air
- Side intake, rear exhaust
- One side must be unobstructed when rack-mounted

Ventilation requirements

To prevent damaging heat build-up and ensure specified performance, observe to the following precautions:

The rear exhaust vent and at least one side vent must be kept free of any obstructions. Even partial blockage could impair proper cooling.

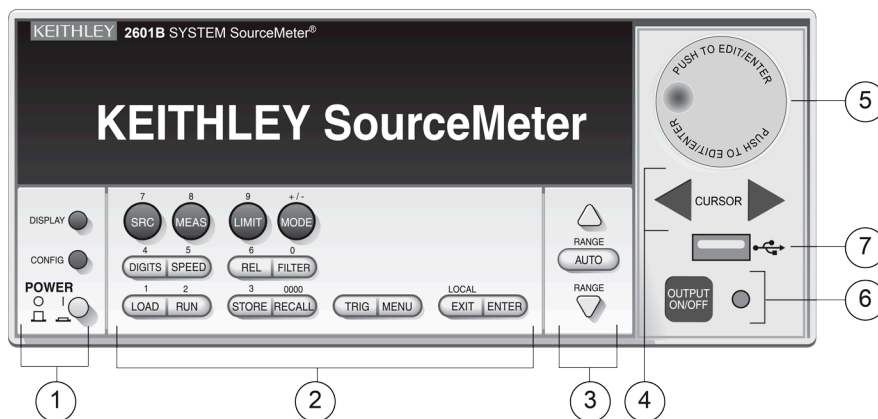
- DO NOT position any devices adjacent to the Series 2600B that force air (heated or unheated) into or onto its cooling vents or surfaces. This additional airflow could compromise accuracy performance.
- When rack mounting the Series 2600B, make sure there is adequate airflow around at least one side to ensure proper cooling. Adequate airflow enables air temperatures within approximately one inch of the Series 2600B surfaces to remain within specified limits under all operating conditions.
- DO NOT rack-mount high power-dissipation equipment adjacent to the Series 2600B that could cause excessive heating to occur. The specified ambient temperature must be maintained around the surfaces of the Series 2600B to maintain specified accuracies.

Front panel

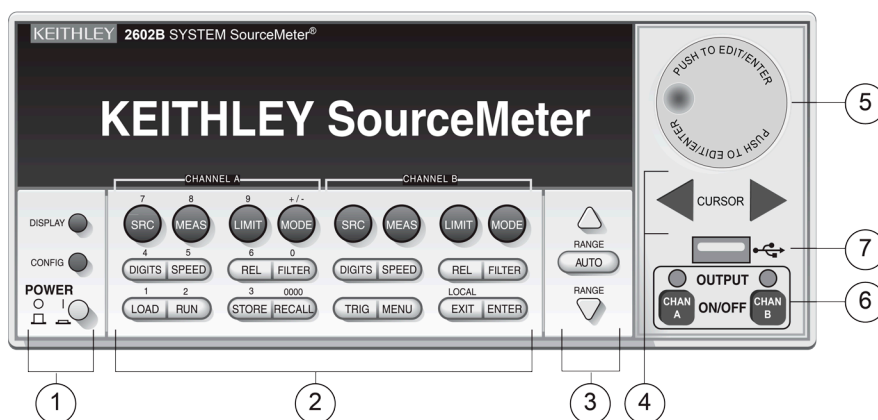
The front panel of the Series 2600B is shown below. The descriptions of the front-panel controls, USB port, and indicators follow the figure.

Figure 1: Front panel (Series 2600B models)

Models 2601B, 2611B, and 2635B
(single channel SMU)



Models 2602B, 2604B, 2612B, 2614B, 2634B, and 2636B
(two channel SMU)



1. Power switch, display and configuration keys



Power switch. The in position turns the Series 2600B on (I); the out position turns it off (O).



DISPLAY Toggles between the various source-measure displays and the user message mode.



CONFIG Configures a function or operation.

2. SMU setup, performance control, special operation, and numbers

SMU (source-measure unit) setup



SRC	Selects the source function (V or A) and places the cursor in the source field for editing.
MEAS	Cycles through measure functions (V, A, Ω , or W).
LIMIT	Places the cursor in the compliance limit field for editing. Also selects the limit value to edit (V, A, or W).
MODE	Selects a meter mode (I-METER, V-METER, OHM-METER, or WATT-METER).

Performance control



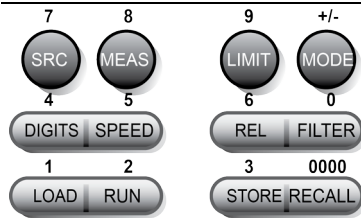
DIGITS	Sets the display resolution (4½, 5½, or 6½ digits).
SPEED	Sets the measurement speed (FAST, MEDium, NORMAL, HI-ACCURACY, or OTHER). Speed and accuracy are set by controlling the measurement aperture.
REL	Controls relative measurements, which allows a baseline value to be subtracted from a reading.
FILTER	Enables or disables the digital filter. You can use this filter to reduce reading noise.


Special operation



LOAD	Loads test for execution (FACTORY, USER, or SCRIPTS).
RUN	Runs the last selected factory or user-defined test.
STORE	Accesses reading buffers and takes readings. TAKE_READINGS: Use to take readings and store them in a reading buffer. SAVE: Use to save a reading buffer to nonvolatile memory or to a user-installed flash drive (USB1) in CSV or XML format. Readings include measurements, source values, and timestamp values, if configured.
RECALL	Recalls information (DATA or STATISTICS) stored in a reading buffer: DATA includes stored readings, and if configured, source values and timestamp values; STATISTICS includes MEAN, STD DEV, SAMPLE SIZE, MINIMUM, MAXIMUM, PK-PK.
TRIG	Triggers readings.
MENU	Accesses the main menu. The main menu can be used to configure many functions and features.
EXIT	Cancels the selection and returns to the previous menu or display. Also used as a LOCAL key to take the instrument out of remote operation.
ENTER	Accepts the selection and moves to the next choice or exits the menu.

Number keys



When enabled and in EDIT mode, the number keys (0-9, +/-, 0000) allow direct numeric entry. Press the navigation wheel  to enter EDIT mode.

3. Range keys



Selects the next higher source or measure range.



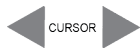
Enables or disables source or measure autorange.




Selects the next lower source or measure range.

In addition to selecting range functions, the up and down range keys change the format for non-range numbers (as an example, when editing the limit value).

4. Cursor keys



Use the CURSOR keys to move the cursor left or right. When the cursor is on the desired source or compliance value digit, push the navigation wheel  to enter edit mode, and turn the navigation wheel to edit the value. Push the navigation wheel again when finished editing. Use the CURSOR keys or the navigation wheel to move through menu items. To view a menu value, use the CURSOR keys for cursor control, and then press the navigation wheel to view the value or sub-menu item.

5. Navigation wheel



Turn the navigation wheel  to:

- Move the cursor to the left and the right (the cursor indicates the selected value or item)
- While in edit mode, increase or decrease a selected source or compliance value

Push the navigation wheel  to:

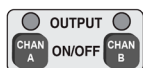
- Enable or disable edit mode for the selected source or compliance value
- Open menus and submenu items
- Select a menu option or a value

6. Output control



One channel

Turns the source output on or off.



Two channel

7. USB port



Use the USB port to connect a USB flash drive to the instrument. You can use the USB flash drive to store reading buffer data, scripts, and user setups. You can also use it to upgrade the firmware.

8. Display indicators (not shown)

The items listed below represent the possible display indicators and their meanings.

Indicator	Meaning
EDIT	Instrument is in editing mode
ERR	Questionable reading or invalid calibration step
REM	Instrument is in remote mode
TALK	Instrument is addressed to talk
LSTN	Instrument is addressed to listen
SRQ	Service request is asserted
REL	Relative mode is enabled
FILT	Digital filter is enabled
AUTO	Source or measure autorange is selected
* (asterisk)	Readings are being stored in the buffer

Rear panel

The rear panel of the Series 2600B is shown below. The descriptions of the rear-panel components follow the figure.

Figure 2: Rear panel (Models 2601B, 2602B, 2611B, and 2612B)

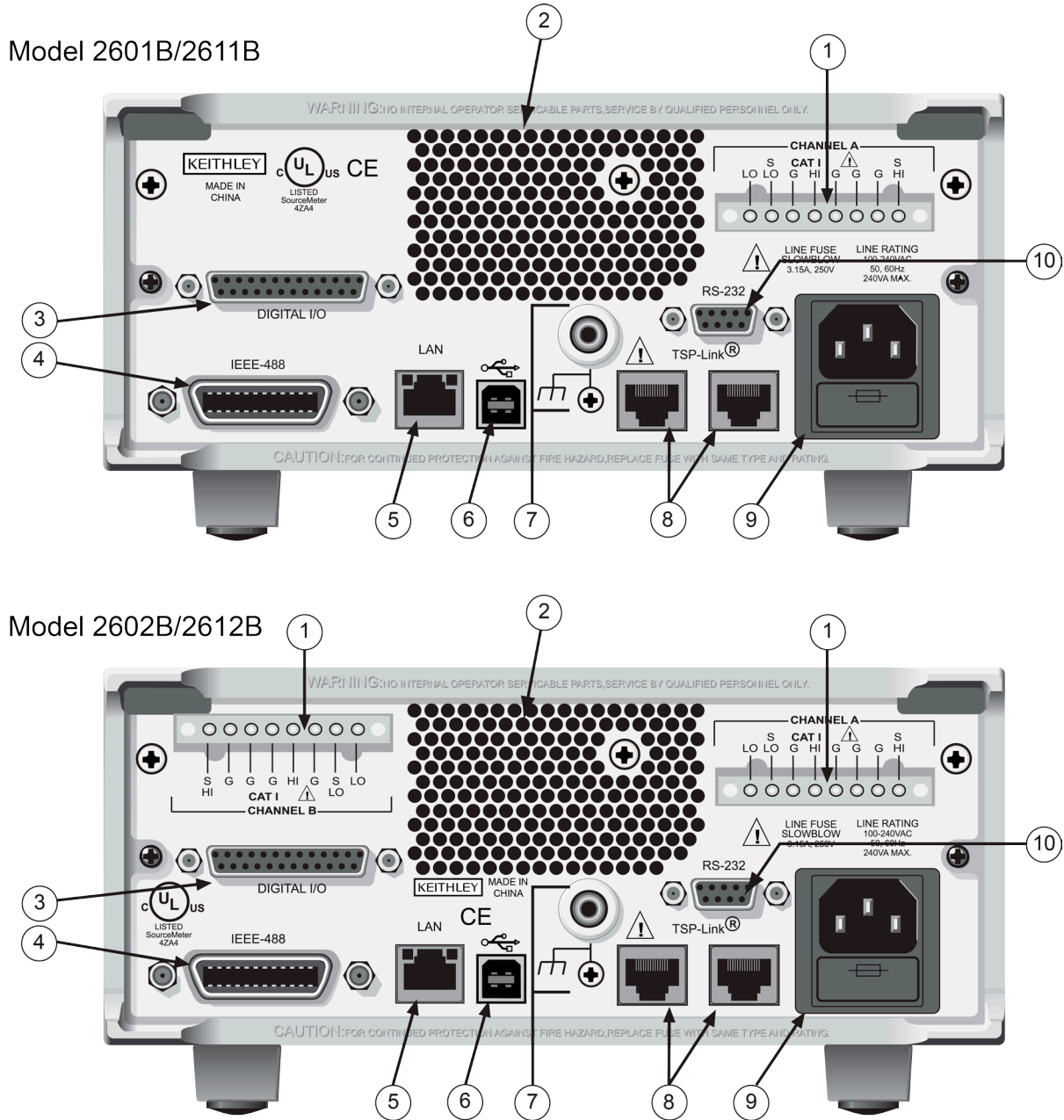


Figure 3: Rear panel (Models 2604B and 2614B)

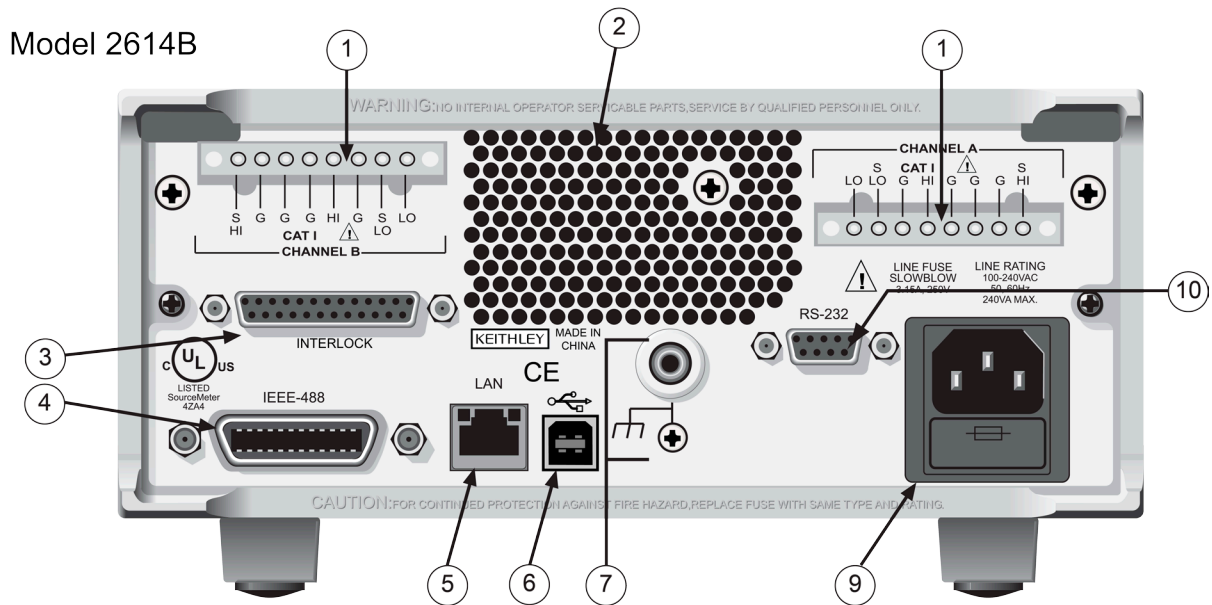
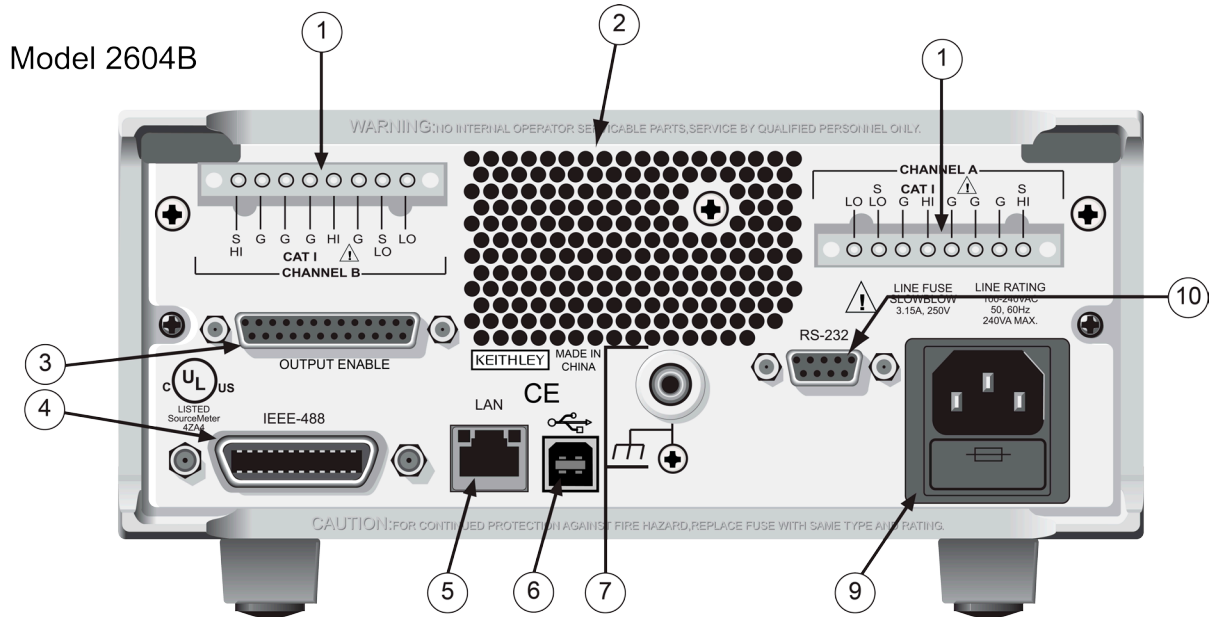


Figure 4: Rear panel (Models 2634B and 2635B)

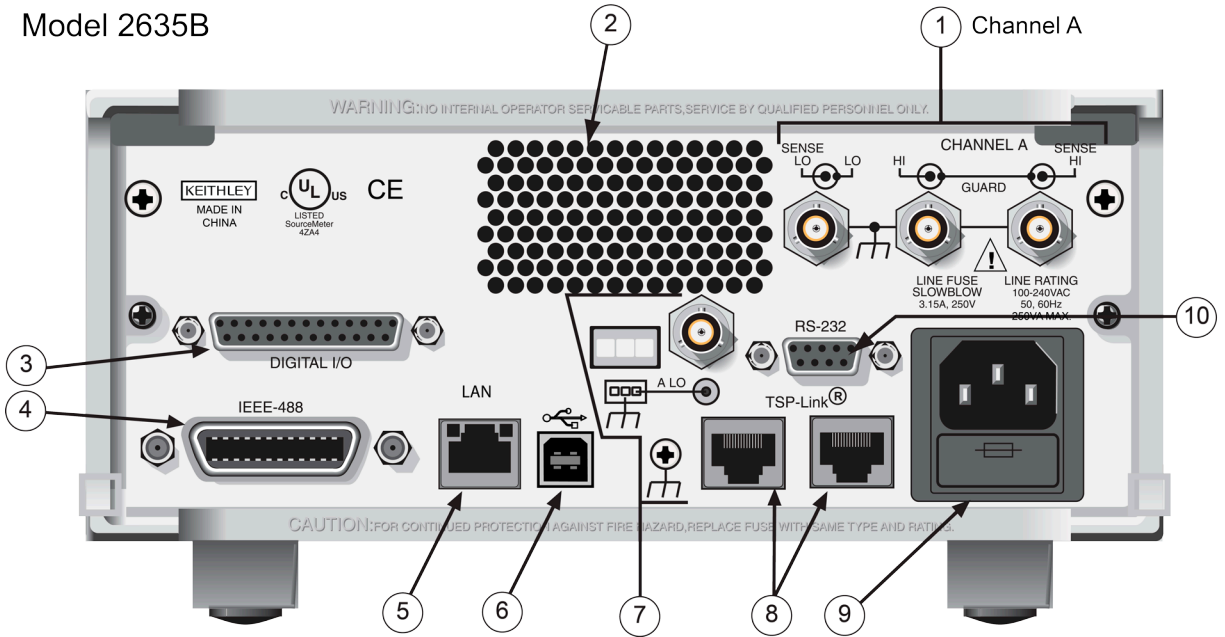
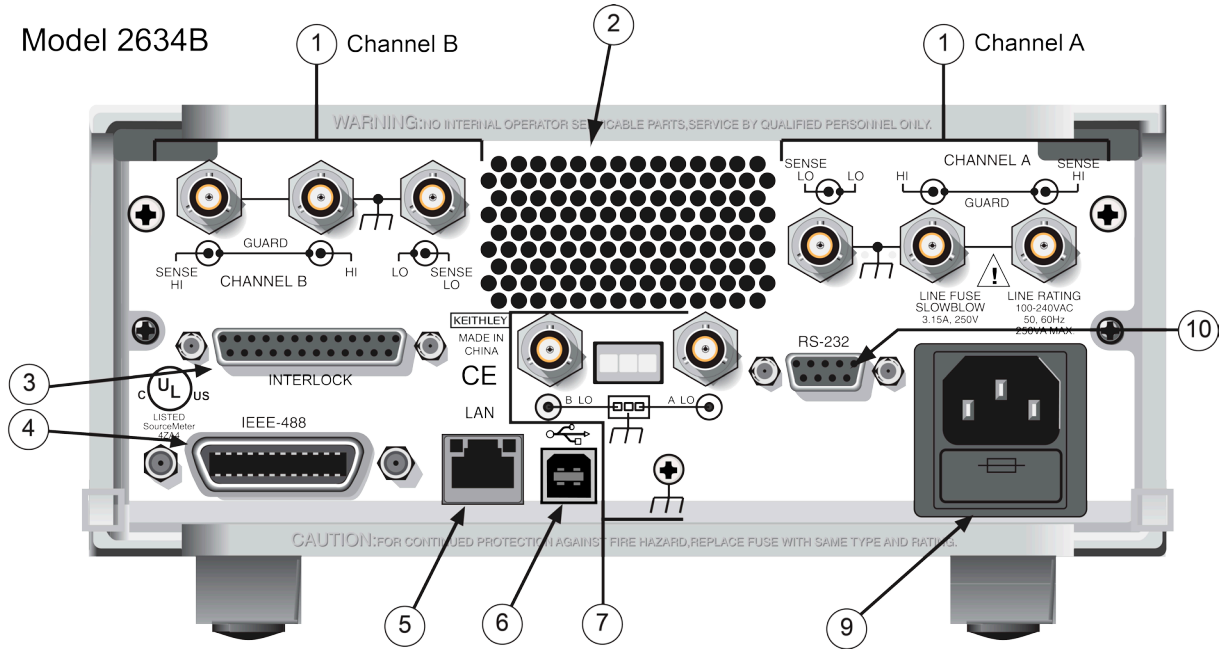
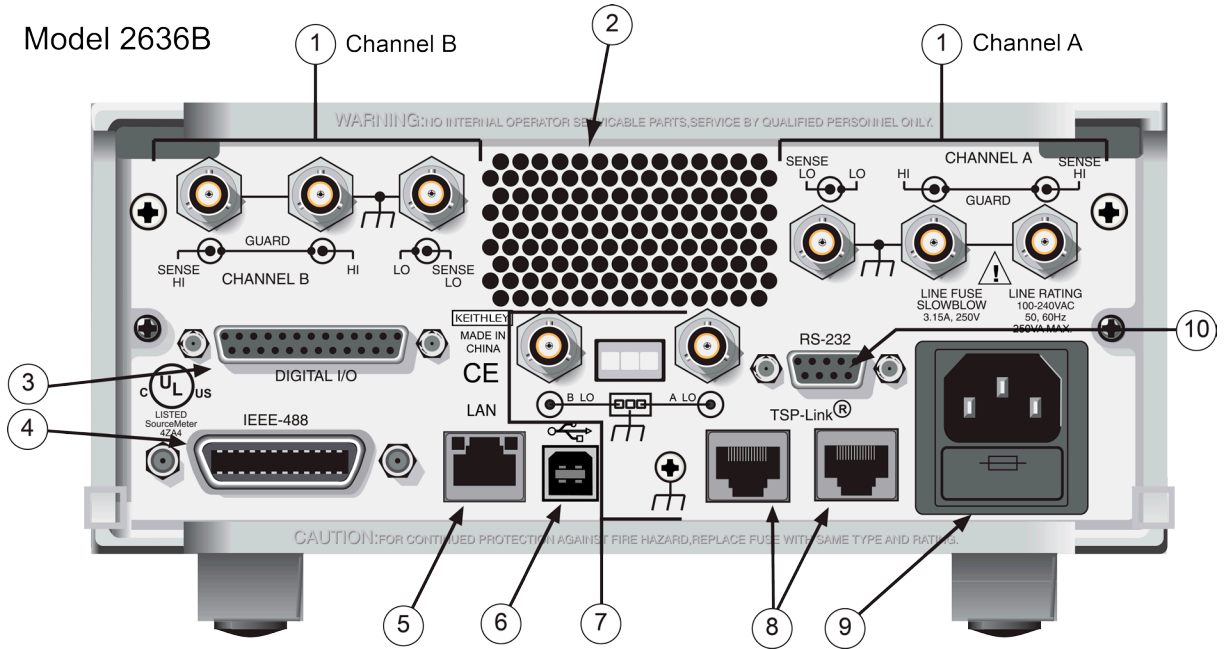


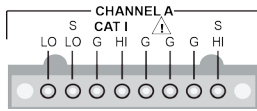
Figure 5: Rear panel (Model 2636B)



1. SMU connector

Channel A

2601B/2602B/2604B/2611B/2612B/2614B

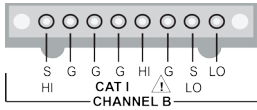


This connector provides input/output connections for HI and LO, sense (S HI/S LO), and guard (G). Connections are as follows:

- LO = LO
- S LO = Sense LO
- G = Guard
- S HI = Sense HI
- HI = HI

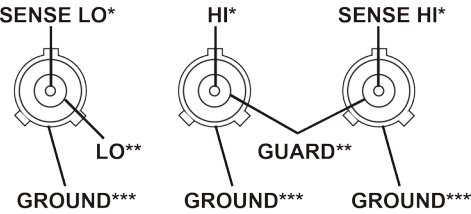
Channel B

2602B/2604B/2612B/2614B



Channel A

2634B/2635B/2636B

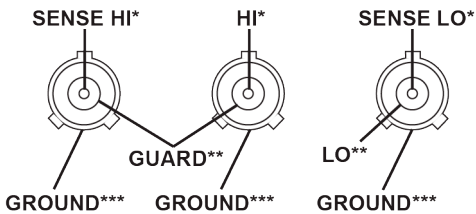


These triaxial connectors provide input/output connections for HI and LO, sense HI and sense LO, guard, and ground. See connections at left. Each connector's conductors are as follows:

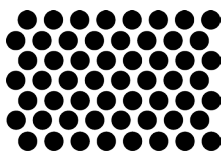
- * Center conductor
- ** Inner shield
- *** Outer shield

Channel B

2634B/2636B



2. Cooling exhaust vents



Exhaust vent for the internal cooling fan. Keep the vent free of obstructions to prevent overheating. Also see [Cooling vents](#) (on page 13).

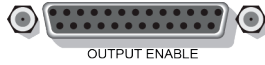
3. Digital I/O

2601B/2602B/2611B/2612B/2635B/2636B



Female DB-25 connector. Use a cable equipped with a male DB-25 connector (Keithley Instruments part number CA-126-1). Pins provided: Fourteen digital input or output pins, seven GND pins, and three +5 V pins. The Models 2601B and 2602B have an output enable pin. The Models 2611B, 2612B, 2635B, and 2636B have an interlock pin.

2604B



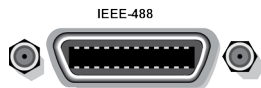
Pins provided: One output enable pin, seven GND pins, and three +5 V pins. The digital input and output pins are not available on the Model 2604B.

2614B/2634B



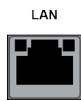
Pins provided: One interlock pin, seven GND pins, and three +5 V pins. The digital input and output pins are not available on the Models 2614B and 2634B.

4. IEEE-488



Connector for IEEE-488 (GPIB) operation. Use a shielded cable, such as the Keithley Instruments Model 7007-1 or Model 7007-2.

5. LAN



RJ-45 connector for a local area network (LAN). The LAN interface supports Auto-MDIX, so either a CAT-5 cross-over cable (provided), or a normal CAT-5 straight-through cable (not provided) can be used.

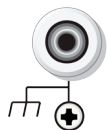
6. USB port



This USB-2.0 receptacle (Type B) located on the rear panel is used to connect the instrument to a computer. You can use this connection to send commands to the instrument.

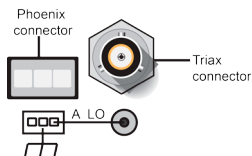
7. Ground

2601B/2602B/2604B/2611B/2612B/2614B



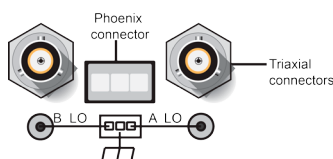
Ground jack for connecting output HI or LO to chassis ground.
Ground screw for connections to chassis ground.

2635B

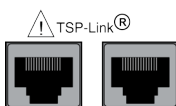


Triaxial connector on ground module.
Phoenix connector on ground module.

2634B/2636B

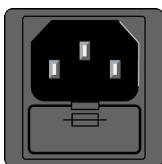


8. TSP-Link



Expansion interface that allows a Series 2600B and other TSP-enabled instruments to trigger and communicate with each other. Use a category 5e or higher LAN crossover cable (Keithley Instruments part number CA-180-3A). The TSP-Link is not available on the Models 2604B, 2614B, and 2634B.

9. Power module



Contains the AC line receptacle and power line fuse. The instrument can operate on line voltages of 100 V to 240 V AC at line frequencies of 50 Hz or 60 Hz.

10. RS-232



Female DB-9 connector. For RS-232 operation, use a straight-through (not null modem) DB-9 shielded cable (Keithley Instruments Model 7009-5) for connection to the computer.

Cooling vents

The Series 2600B has side and top intake and rear exhaust vents. One side must be unobstructed to dissipate heat.

Excessive heat could damage the Series 2600B and degrade its performance. Only operate the Series 2600B in an environment where the ambient temperature does not exceed 50 °C (122 °F).

Do not place a container of liquid (water or coffee, for instance) on the top cover. If it spills, the liquid may enter the case through the vents and cause severe damage.

 **CAUTION**

To prevent damaging heat build-up and ensure specified performance, use the following guidelines.

The rear exhaust vent and either the top or both side intake vents must be unobstructed to properly dissipate heat. Even partial blockage could impair proper cooling.

DO NOT position any devices adjacent to the Series 2600B that force air (heated or unheated) toward its cooling vents or surfaces. This additional airflow could compromise accuracy.

When rack mounting the Series 2600B, make sure there is adequate airflow around both sides to ensure proper cooling. Adequate airflow enables air temperatures within approximately one inch of the Series 2600B surfaces to remain within specified limits under all operating conditions.

Rack mounting high power dissipation equipment adjacent to the Series 2600B could cause excessive heating to occur. To produce specified Series 2600B accuracies, maintain the specified ambient temperature around the surfaces of the Series 2600B. Proper cooling practice, in rack configurations with convection cooling only, places the hottest non-precision equipment (for example, the power supply) at the top of the rack away from and above precision equipment (such as the Series 2600B).

Mount precision equipment as low as possible in the rack, where temperatures are coolest. Adding space panels above and below the Series 2600B will help provide adequate airflow.

Turning your instrument on and off

The following topics describe how to power your instrument on and off, place an instrument in standby, and configure the line frequency.

Procedure

The Series 2600B operates from a line voltage of 100 V to 240 V at a frequency of 50 Hz or 60 Hz. Line voltage is automatically sensed (there are no switches to set). Make sure the operating voltage in your area is compatible.

Follow the procedure below to connect the Series 2600B to line power and turn on the instrument.

 **CAUTION**

Operating the instrument on an incorrect line voltage may cause damage to the instrument, possibly voiding the warranty.

To turn a Series 2600B on and off:

1. Before plugging in the power cord, make sure that the front panel POWER switch is in the off (O) position.
2. Connect the female end of the supplied power cord to the AC receptacle on the rear panel.
3. Connect the other end of the power cord to a grounded AC outlet.

 **WARNING**

The power cord supplied with the Series 2600B contains a separate protective earth (safety ground) wire for use with grounded outlets. When proper connections are made, the instrument chassis is connected to power-line ground through the ground wire in the power cord. In addition, a protective earth (safety ground) connection is provided through a screw on the rear panel. In the event of a failure, not using a properly grounded protective earth (safety ground) or grounded outlet may result in personal injury or death due to electric shock.

4. To turn your instrument on, press the front panel **POWER** switch to place it in the on (I) position.
5. To turn your instrument off, press the front panel **POWER** switch to place it in the off (O) position.

Placing a Series 2600B in standby

 **WARNING**

Placing the Series 2600B in standby does not place the instrument in a safe state (an Interlock is provided for this function).

When the instrument is on, the output may be placed in an active output state (output on) or a standby mode (output off). From the front panel, pressing the **OUTPUT ON/OFF** control toggles the output using the present instrument configuration. You can also place the output in standby over the remote interface by sending the following command:

```
smux.source.output = 0
```

Even though the instrument is placed in standby, the output may not be actually off.

Warmup period



The Series 2600B must be turned on and allowed to warm up for at least two hours to achieve rated accuracies.

Line frequency configuration

The factory configures the Series 2600B to automatically detect the power line frequency (either 50 Hz or 60 Hz) at each power-up. This detected line frequency is used for aperture (NPLC) calculations.

In noisy environments, you can manually configure the instrument to match the actual line frequency.

To configure the line frequency from the front panel:

1. Press the **MENU** key, then turn the navigation wheel  to select **LINE-FREQ**, and then press the **ENTER** key.
2. Turn the navigation wheel  to select the appropriate frequency and then press the **ENTER** key. To configure the instrument to automatically detect line frequency at each power-up, select **AUTO**.
3. Press the **EXIT (LOCAL)** key to back out of the menu structure.

To configure the line frequency from a remote interface:

Set the `localnode.linefreq` or the `localnode.autolinefreq` attribute. The following programming example illustrates how to set the line frequency to 60 Hz:

```
localnode.linefreq = 60
```

The following programming example illustrates how to remotely configure the instrument to automatically detect line frequency at each power-up:

```
localnode.autolinefreq = true
```

Line fuse replacement

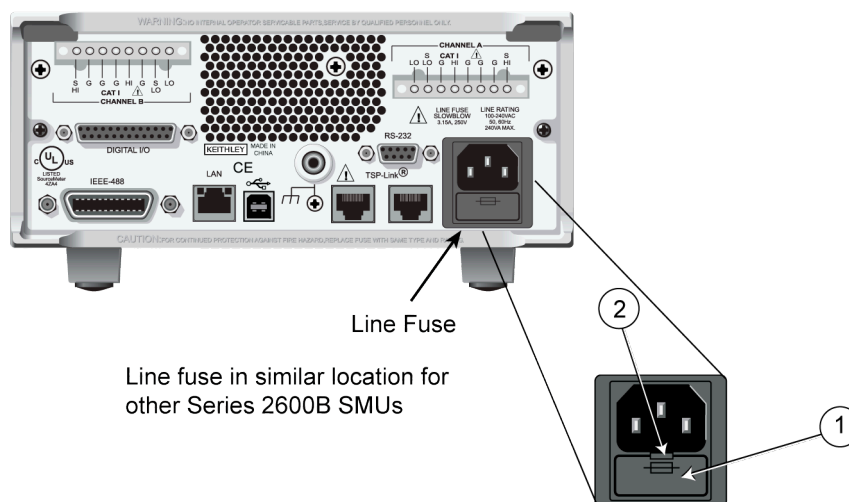
A fuse located on the Series 2600B rear panel protects the power line input of the instrument.

WARNING

Disconnect the line cord at the rear panel and remove all test leads connected to the instrument before replacing the line fuse. Failure to do so could expose the operator to hazardous voltages that could result in personal injury or death.

Figure 6: Fuse replacement

Model 2602B/2612B



⚠ WARNING

To prevent injury, death, or instrument damage, use only the correct fuse type (see table).

Perform the following steps to replace the line fuse:

1. Power off the instrument and remove the line cord.
2. The fuse drawer (item 1 in the figure) is located below the AC receptacle. A small tab is located on the top of the fuse drawer (item 2). Using a thin-bladed knife or a screwdriver, pry this tab away from the AC receptacle.
3. Slide the fuse drawer out to gain access to the fuse (the fuse drawer does not pull completely out of the power module).
4. Snap the fuse out of the drawer and replace it with the same type (the fuse is specified in the table below).
5. Push the fuse drawer back into the module.

If the power line fuse continues to blow, a circuit malfunction exists and must be corrected. Return the instrument to Keithley Instruments for repair.

Line fuse

Line voltage	Rating	Keithley part number
100 - 240 V	250 V, 3.15 A, Slow Blow 5 x 20 mm	FU-106-3.15

System information

You can display serial number, firmware revision, and calibration dates by selecting **SYSTEM-INFO** from the main menu.


To view the system information from the front panel:

1. Press the **MENU** key.
2. Select **SYSTEM-INFO**.
3. Select one of the following:
 - **FIRMWARE**
 - **SERIAL#**
 - **CAL**

For remote programming, use the `*IDN?` query to read system information.

Beeper

The Series 2600B includes a beeper. When it is enabled, a beep indicates one of the following actions have occurred:

- A front-panel key was pressed: A short beep, similar to a key click, is issued.
- The navigation wheel  was turned or pressed: A short beep is issued.
- The output source was changed: A longer beep is issued when you press the OUTPUT ON/OFF control (turn the output on or off).

To turn the beeper on or off from the front panel:

1. Press the **MENU** key, and then select **BEEPER**.
2. Select one of the following:
 - **ENABLE**
 - **DISABLE**

To turn the beeper on or off from the TSP command interface:

Set the `beeper.enable` attribute. For example, to enable the beeper, send:

```
beeper.enable = 1
```

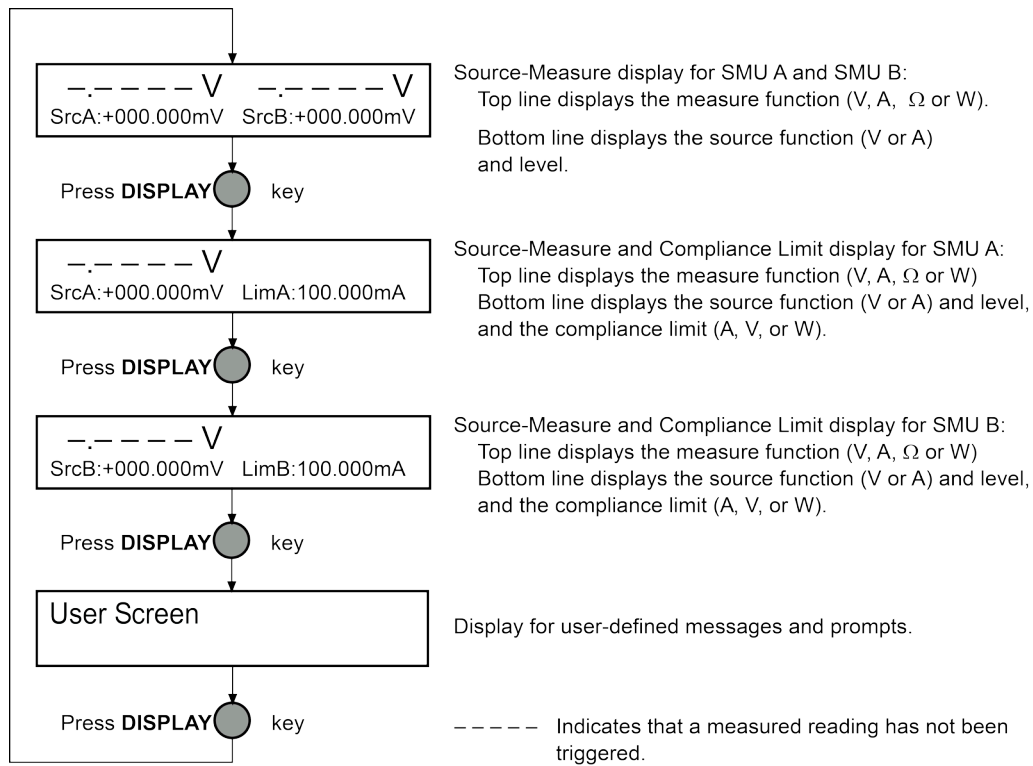
Display mode

Use the **DISPLAY** key to scroll through the various display modes shown in the figure below. Refer to Display operations for more information about the display.

For the Models 2602B, 2604B, 2612B, 2614B, 2634B, and 2636B only, press the **DISPLAY** key more than once to cycle through the dual channel and single channel display modes. This applies to CHANNEL A (SMU A) and CHANNEL B (SMU B).

The Models 2601B, 2611B, and 2635B have a single channel (SMU A).

Figure 7: Display modes



Basic operation

WARNING

For the Models 2611B, 2612B, 2614B, 2634B, 2635B, and 2636B, hazardous voltages may be present on all output and guard terminals. To prevent electrical shock that could cause injury or death, never make or break connections to the Series 2600B while the instrument is powered on. Turn off the equipment from the front panel or disconnect the main power cord from the rear of the Series 2600B before handling cables. Putting the equipment into standby does not guarantee that the outputs are powered off if a hardware or software fault occurs.

Operation overview

Quick Tip

Before you begin any of the following front panel procedures, make sure that you exit out of the menu structure. Press the **EXIT (LOCAL)** key as many times as needed to return to the main display.

Source-measure capabilities

From the front panel, the instrument can be configured to perform the following source-measure operations:

- **Source voltage:** Measure and display current, voltage, resistance, or power
- **Source current:** Measure and display voltage, current, resistance, or power
- **Measure resistance:** Display resistance calculated from voltage and current components of measurement (can optionally specify source voltage or source current value)
- **Measure power:** Display power calculated from voltage and current components of measurement (can optionally specify source voltage or source current value)
- **Measure only (V or I):** Display voltage or current measurement

Voltage and current

The following table lists the source and measure limits for the voltage and current functions.

Source-measure capabilities

Model 2601B/2602B/2604B			Model 2611B/2612B/2614B			Model 2634B/2635B/2636B		
Range	Source	Measure	Range	Source	Measure	Range	Source	Measure
100 mV	±101 mV	±102 mV	200 mV	±202 mV	±204 mV	200 mV	±202 mV	±204 mV
1 V	±1.01 V	±1.02 V	2 V	±2.02 V	±2.04 V	2 V	±2.02 V	±2.04 V
6 V	±6.06 V	±6.12 V	20 V	±20.2 V	±20.4 V	20 V	±20.2 V	±20.4 V
40 V	±40.4 V	±40.8 V	200 V ¹	±202 V	±204 V	200 V ³	±202 V	±204 V
100 nA	±101 nA	±102 nA	100 nA	±101 nA	±102 nA	100 pA ⁴	N/A	±102 pA
1 µA	±1.01 µA	±1.02 µA	1 µA	±1.01 µA	±1.02 µA	1 nA	±1.01 nA	±1.02 nA
10 µA	±10.1 µA	±10.2 µA	10 µA	±10.1 µA	±10.2 µA	10 nA	±10.1 nA	±10.2 nA
100 µA	±101 µA	±102 µA	100 µA	±101 µA	±102 µA	100 nA	±101 nA	±102 nA
1 mA	±1.01 mA	±1.02 mA	1 mA	±1.01 mA	±1.02 mA	1 µA	±1.01 µA	±1.02 µA
10 mA	±10.1 mA	±10.2 mA	10 mA	±10.1 mA	±10.2 mA	10 µA	±10.1 µA	±10.2 µA
100 mA	±101 mA	±102 mA	100 mA	±101 mA	±102 mA	100 µA	±101 µA	±102 µA
1 A	±1.01 A	±1.02 A	1 A	±1.01 A	±1.02 A	1 mA	±1.01 mA	±1.02 mA
3 A	±3.03 A	±3.06 A	1.5 A	±1.515 A	±1.53 A	10 mA	±10.1 mA	±10.2 mA
			10 A ²	±10.1 A	±10.2 A	100 mA	±101 mA	±102 mA
						1 A	±1.01 A	±1.02 A
						1.5 A	±1.515 A	±1.53 A
Max Power = 40.4 W per channel			Max Power = 30.603 W per channel			Max Power = 30.603 W per channel		
			¹ 200 V source range available only when interlock is enabled. See Digital I/O.			³ 200 V source range available only when interlock is enabled. See Digital I/O.		
			² 10 A range available only in pulse mode.			⁴ 100 pA range is not available on the Model 2634B.		

Basic source-measure procedure

Front-panel source-measure procedure



Use the following procedure to perform the basic source-measure operations of the Series 2600B. The following procedure assumes that the Series 2600B is already connected to the device under test (DUT), as explained in DUT test connections.

WARNING

Hazardous voltages may be present on all output and guard terminals. To prevent electrical shock that could cause injury or death, never make or break connections to the Series 2600B while the instrument is powered on. Turn off the equipment from the front panel or disconnect the main power cord from the rear of the Series 2600B before handling cables. Putting the equipment into standby does not guarantee that the outputs are powered off if a hardware or software fault occurs.




Step 1: Select and set the source level

Perform the following steps to select the source and edit the source value:

1. Press the **SRC** key as needed to select the voltage source or current source, as indicated by the units in the source field on the display. The flashing digit (cursor) indicates which value is presently selected for editing.
2. Move the cursor to the digit to change, then press the navigation wheel  to enter the EDIT mode, as indicated by the EDIT indicator.
3. Use the **RANGE** keys to select a range that will accommodate the value you want to set. See Range for more information. For best accuracy, use the lowest possible source range.
4. Enter the source value.
5. Press the **ENTER** key or the navigation wheel  to complete editing.

Step 2: Set the compliance limit

Perform the following steps to edit the compliance limit value:

1. If the instrument has two channels (Models 2602B, 2604B, 2612B, 2614B, 2634B, and 2636B) and is in dual-channel display mode, perform the following (steps a, b, and c). Otherwise, go to the next step.
 - a. Press the **CONFIG** key.
 - b. Press the **LIMIT** key and then select **CURRENT** or **VOLTAGE**.
 - c. Press the **ENTER** key or the navigation wheel .
2. If the instrument has only one channel (Models 2601B, 2611B, and 2635B), or if it is a two-channel instrument that is in single-channel display mode, press the **LIMIT** key.
3. Move the cursor to the digit to change, then press the navigation wheel  to enter the EDIT mode, as indicated by the EDIT indicator.
4. Enter the limit value, then press the **ENTER** key or the navigation wheel  to complete editing.

Step 3: Select the measurement function and range

Select measurement function and range as follows:

1. If the instrument has two channels (Models 2602B, 2604B, 2612B, 2614B, 2634B, and 2636B), press the **DISPLAY** key to place it in single-channel-display mode (if not already). Otherwise, go to the next step.
2. Select the measurement function by pressing the **MEAS** key.
3. Set the measurement range with the **RANGE** keys, or enable **AUTO** range. When setting the range, consider the following points:
 - When measuring the source (such as when sourcing V and measuring V), you cannot select the measurement range using the RANGE keys. The selected source range determines the measurement range.
 - When not measuring the source (such as when sourcing V but measuring I), measurement range selection can be done manually or automatically. When using manual ranging, use the lowest possible range for best accuracy. When autorange is enabled, the Series 2600B automatically goes to the most sensitive range to make the measurement.

Step 4: Turn the output on

Turn the output on by pressing the **OUTPUT ON/OFF** control. The OUTPUT indicator light switches on.

Step 5: Observe readings on the display.

Press the **TRIG** key if necessary to trigger the instrument to begin taking readings. The readings are on the top line, and source and limit values are on the bottom line.

Step 6: Turn the output off

When finished, turn the output off by pressing the **OUTPUT ON/OFF** control. The OUTPUT indicator light switches off.

Safety concerns

WARNING

This instrument can produce high current, high power outputs that can cause heating of connectors and wires. Always use wires and connectors that are rated for the maximum current ratings of the instrument. Failure to provide correctly rating wires and connectors can result in a fire.

CAUTION

To protect sensitive devices under test, consider using external fuses or other current limiting devices. Failure to provide current limit devices may result in damage to sensitive devices under test.

NOTE

When using 4-wire (sense), if a sense lead becomes disconnected, current in excess of the instrument ratings can flow. Consider using external resistors to connect HI to sense HI and LO to sense LO at the instrument terminals to mitigate this risk. 100 K Ω resistors are recommended.

Contact information

If you have any questions after you review the information in this documentation, please contact your local Keithley Instruments representative or call Keithley Instruments corporate headquarters (toll-free inside the U.S. and Canada only) at 1-888-KEITHLEY (1-888-534-8453), or from outside the U.S. at +1-440-248-0400. For worldwide contact numbers, visit the [Keithley Instruments website](http://www.keithley.com) (<http://www.keithley.com>).