## The Front Panel at a Glance
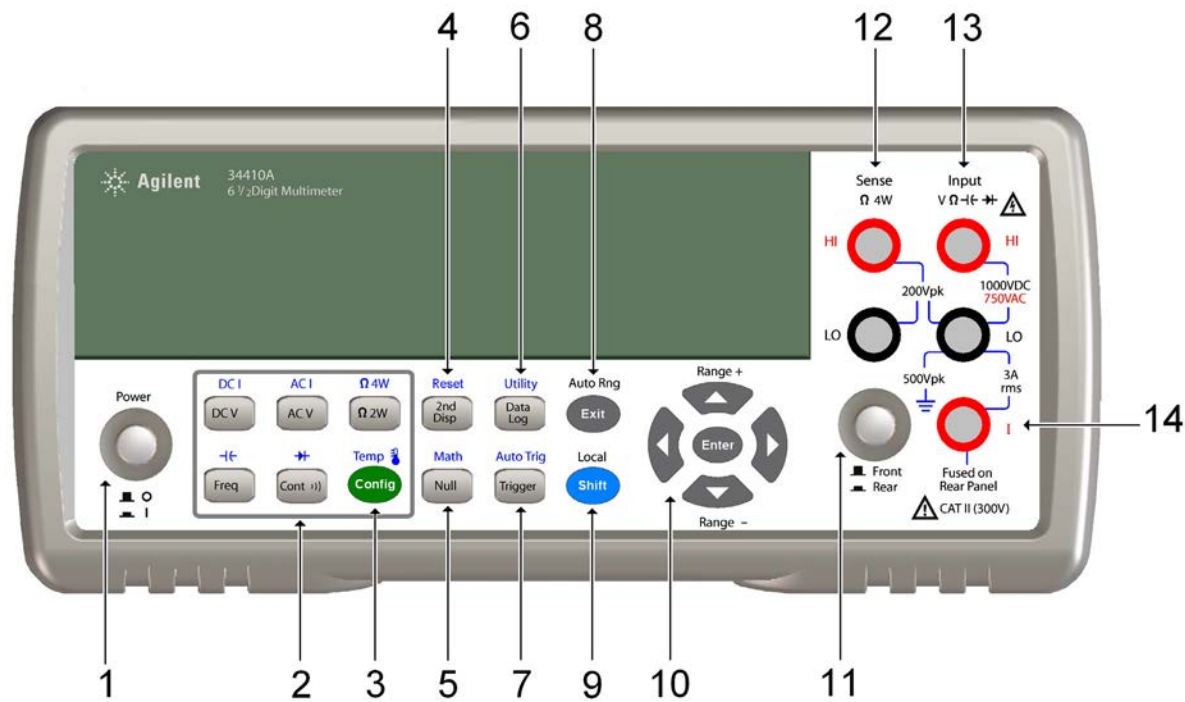


**1** On/Off Switch
**2** Measurement Function Keys
**3** Configuration Key
**4** Second Display Key (Reset)
**5** Null Key (Math Functions)
**6** Data Logger Key (Utility)
**7** Trigger Key (Auto Trig)
**8** Exit Key (Auto Range)
**9** Shift Key (Local)
**10** Menu Navigation Keys (Range)
**11** Front/Rear Switch
**12** HI and LO Sense Terminals (4-wire measurements)
**13** HI and LO Input Terminals (all functions except current)
**14** Current Input Terminal (ac and dc current)

The **Front/Rear** switch is used to select either the front or rear set of terminals.

Use the **Shift** key to select shifted functions (the blue legends above the keys.)

Use the **Config** key to open the configuration menu for the selected measurement function.

**Note:** **Shift** **Config** selects the temperature function. Press **Config** again to configure temperature.

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## Safety Summary

Do not defeat power cord safety ground feature. Plug in to a grounded (earthed) outlet. Do not use product in any manner not specified by the manufacturer.

Do not install substitute parts or perform any unauthorized modification to the product. Return the product to Agilent Technologies or a designated repair center for service to ensure that safety features are maintained.

### WARNING

A WARNING notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in personal injury or death. Do not proceed beyond a WARNING notice until the indicated conditions are fully understood and met.

### CAUTION

A CAUTION notice denotes a hazard. It calls attention to an operating procedure, practice, or the like that, if not correctly performed or adhered to, could result in damage to the product or loss of important data. Do not proceed beyond a CAUTION notice until the indicated conditions are fully understood and met.

### Symbols

Earth Ground

Chassis Ground

Risk of electric shock

Refer to manual for additional safety information.

**CAT II (300 v)** IEC Measurement Category II. Inputs can be connected to mains (up to 300 VAC) under Category II overvoltage conditions.

### WARNING

**Main Power and Test Input Disconnect:** Unplug product from wall outlet, remove power cord, and remove all probes from all terminals before servicing. Only qualified, service-trained personnel should remove the cover from the instrument.

**Line and Current Protection Fuses:** For continued protection against fire, replace the line fuse and the current-protection fuse only with fuses of the specified type and rating.

**Front/Rear Switch:** Do not change the position of the Front/Rear switch on the front panel while signals are present on either the front or rear set of terminals. Switching while high voltages or currents are present may cause instrument damage and lead to the risk of electric shock.

**IEC Measurement Category II.** The HI and LO input terminals may be connected to mains under IEC Measurement Category II overvoltage conditions for measurement of line voltages up to 300 VAC. To avoid the danger of electric shock, do not connect the inputs to mains for line voltages above 300 VAC. Connect to mains only at an outlet, or in a device connected to such an outlet, on a branch circuit protected by a circuit breaker. See "Safety Notices" in the *User's Guide* for further information.

**Protection Limits:** To avoid instrument damage and the risk of electric shock, do not exceed any of the protection limits indicated on the terminal panel and defined in the *User's Guide*.

### ADDITIONAL SAFETY INFORMATION

For further information, refer to the "Safety Notices" section in the *Agilent 34410A/11A User's Guide*.

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# Agilent 34410A/11A
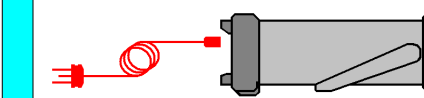# 6½ Digit Multimeter
# Quick Start Tutorial

**Product Reference CD-ROM.** All product documentation, software, and examples are included on the *Agilent 34410A/34411A Product Reference CD-ROM*.

### 1. Preparing for Use

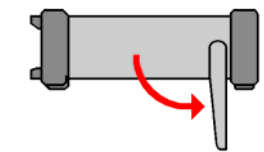**Connect the Power Cord.**

Then plug in the instrument.



*Line voltage switch is set at factory for country of destination.*

**Adjust the Carry Handle.**

Grasp the handle by the sides and *pull outward:*

Then adjust the handle to the desired position:

**Connect the Test Leads to the Input Terminals.**



AC or DC Voltage*

AC or DC Current

4-wire Resistance or Temperature
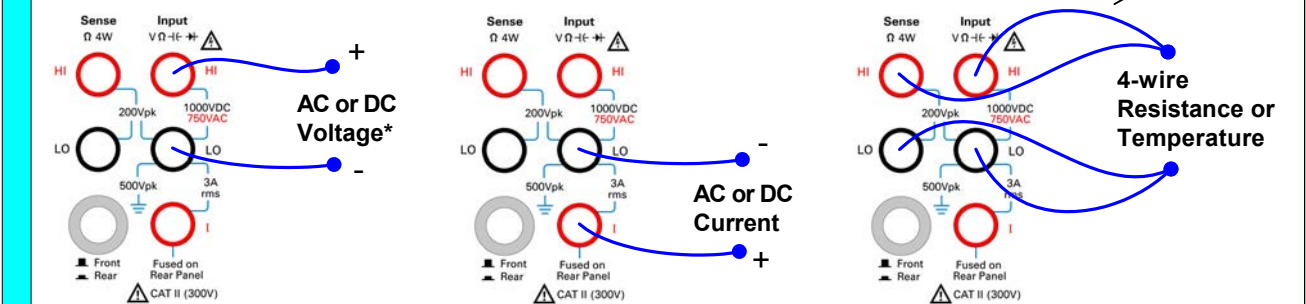
\* Also used for capacitance, continuity, diode test, frequency, 2-wire resistance, and 2-wire temperature measurements.

See "Safety Summary" on the back of this tutorial.

**Turn Page for Step 2**

**Agilent Technologies**

## 2. Turning On the Meter

*In the following example we'll measure the dc and ac components of a sine wave with a dc offset:*

Press the **Power** (on/off) switch:

The self test takes a few seconds. The meter defaults to DC voltage (autorange):

```
*--0500.23   VDC
```

**Note:** The **Power** and **Front/Rear** switches both maintain their states mechanically. The **Rear** annunciator is lit on the display if the rear set of terminals is selected.

## 3. Selecting a Function

To select a measurement function, press the appropriate key. For example, for the AC voltage function, press:

[ AC V ]

```
*   0.164286 VAC
```

**Go to Step 4 at Right**

## 4. Changing the Measurement Configuration

Each measurement function has its own config-uration menu. To open the menu, press ( Config )

```
AC FILTER
  20 HZ : MEDIUM
```

You are prompted to select an AC Filter value. The arrows indicate there are more choices to the left and right. To select 200 Hz, use the ( ▶ ) key.

```
AC FILTER
  200 HZ : FAST
```

Now press ( Enter ) to advance in the menu.

```
RANGE
  AUTO MANUAL
```

Select manual range (use ( ▶ ) ), and press ( Enter )

```
RANGE
100mV   1 V   10 V  ▶
```

The "fully bright" menu item ("**1 V**" above) is selected.

You can change the range (use ( ◀ ▶ ) ), or just press ( Enter ) to advance in the menu.

```
NULL
  OFF ON
```

Press ( Enter ) again to return to the reading (or you can press ( Exit ) ).

```
*  0.164266 VAC
```

**The** ☀ **Tip**   **Range and Resolution Shortcuts**

Use the menu navigation keys without going to a menu to set the range. Just press **Auto Rng** ( ( Exit ) ) to toggle between auto and manual range. Press **Range +** and **Range -** ( ( ▲ ) ( ▼ ) ) to increase or decrease the range.

You can also use ( ◀ ▶ ) to set measurement speed/resolution, or ( Shift ), then ( ◀ ▶ ) to select the number of digits.

**Go to Step 5, at far left below**

## 5. Displaying a Second Measurement Function

For some measurements you can display another measurement on the second display line.

Lets try it. Press [ Freq ]

```
*999.9835   HZ
```

Now press [ 2nd Disp ]

```
2ND DISPLAY
  OFF ACV
```

Now select **ACV** for the second display, and press ( Enter )

```
*999.9855   HZ
  0.1644 VAC
```

To turn off the second display, press [ 2nd Disp ]

```
2ND DISPLAY
  OFF ACV
```

Now select **OFF** and press ( Enter )

## 6. Triggering a Measurement

The trigger function allows you to trigger measurements either internally or externally.

Lets try it. Press [ Trigger ]

```
Trig
999.9894   HZ
```

The instrument goes into single trigger mode, and takes a reading. Press [ Trigger ] again to take another reading.

```
Trig
999.9889   HZ
```

To return to auto trigger, press:

[ Shift ] [ Trigger ]

```
TRIGGER
  AUTO HOLD SETUP
```

Then press the ( Enter ) key to return to continuous measurements.

From the **TRIGGER** menu you can also select the reading **HOLD** feature, or you can select **SETUP** if you want to set the trigger parameters (see the *User's Guide*).

## 7. Hints

1. Within a measurement configuration menu, the ( Config ) key does the same thing as the ( Enter ) key.

2. Press ( Exit ) to exit a menu at any time.

3. Press ( Shift ) first, and then the shifted function key.

4. You can speed through the menu and save changes by holding down the ( Enter ) key.

5. Use the **Utility** menu ( ( Shift ) [ Data Log ] ) to configure the LAN, USB, or GPIB remote interfaces, and for general configuration.

6. When the instrument is in remote mode, the ( Shift ) key serves as the **Local** key.

7. To reset the instrument, press ( Shift ) [ 2nd Disp ] (**Reset**).

8. For further information, see the *Agilent 34410A/11A User's Guide.*

9. For information on SCPI programming, see the *Agilent 34410A/11A Programmer's Reference Help.*

10. All documentation is included electronically on the *Agilent 34410A/11A Product Reference CD-ROM.*