Quick equipment guide for SP EE16b

Oscilloscope: measure dynamic voltage signals

1. Connect to (find 10x probes on the rack)

2. Connect to signal node to be measured

3. Connect to reference node

4. Check if is on. Push it if it’s off.

5. Adjust to set (1V per div works for most cases)

6. Adjust to set the vertical position. Centering works for most cases with 1.00V/div

7. Zoom in the waveform if necessary by adjusting knobs in 5-6.

8. For measuring dynamic signals, you should set the horizontal & trigger settings correctly. Pushing [Auto Scale] button does the job automatically with proper scaling settings. The autoscaling function works in many cases but you can also set the horizontal & trigger settings manually.
**Power supply: almost ideal voltage (or current) source**

1. **Set current limit**
   a) Press \(\text{Lmt}^\text{Display Limit}\). You should see \(\text{b}^\text{binking}^\text{blinking}.
   b) Press \(\text{Current}^\text{Current}\) to make \(\text{b}^\text{binking}^\text{blinking}.
   c) Adjust \(\text{Current}^\text{Current}\) to set the current limit to \(\text{b}^\text{binking}^\text{blinking}^\text{binking}^\text{binking}^\text{binking}.
   *In most cases, 0.1A (=100mA) should work.
   d) Press \(\text{Current}^\text{Current}\) again to go back to \(\text{b}^\text{binking}^\text{blinking}.
   e) Press \(\text{Display}^\text{Display}\) again to go back to

2. **Check if the voltage level is set to zero**
   a) Press \(\text{On/Off}^\text{Output}\) and \(\text{+6V}^\text{Voltage}\) and see if the voltage is zero for +6V terminal.

3. **Connect** the +6V terminal to your circuit.
   a) Connect \(\text{Supply}^\text{Supply}\) to the supply node of your circuit via and 
   b) Connect \(\text{Reference}^\text{Reference}\) to the reference node of your circuit through and 

4. **Turn on the supply set the voltage level**
   a) Press \(\text{Output}^\text{Output}\) (if \(\text{Lmt}^\text{Display Limit}\) is not blinking press \(\text{Current}^\text{Current}\) to set the supply to voltage mode)
   a) Adjust \(\text{Current}^\text{Current}\) slowly to set the voltage level.
**Multimeter:** reads ‘DC’ voltage, current, resistance

1. **Disconnect** all connections from multimeter

2. **Press** [DC V] or [DC I] or [Ω] depending on the parameter to be measured

3. **Make connections** between meter and the circuit (be careful choosing right ports)

![Multimeter](image)

A: Voltage & resistance, C & D: Current

4. **Read** the value on screen and **disconnect** connections

5. Most trouble happens when measuring current. **Avoid current measurement unless necessary**

**Breadboard:** connects components to make a prototype circuit

Below figure shows internal connections & one example of making a circuit on breadboard.