Analog Multimeter Basics and Measuring Resistance
Analog Meter Precautions

• Do not Jar, manhandle, drop or pile tools or any thing else on your meter.
  – In both of these precautions, you do not want to jar the needle from it jeweled pivot!

• Do not place your multimeter in a place where you may accidentally knock it over or pull it to the floor.
• Do not let your multimeter get wet and never store it in a damp place.
  – If you do get it wet, open the case and let it set open until it is dry.

• Do not let your Ohm meter set on any of the resistance ranges when not in use or when in storage. Turn off etc...
  – This can cause the battery in the meter to run down.
• Don’t let magnetized objects near your meter!
  – This may permanently decrease your meter’s accuracy.

• Do not let depleted batteries remain in your meter.
  – The batteries are needed to operate your Ohm meter.
  – Bad batteries can leak and cause damage.
Touch the probes together multiple times to see the meter movement.

• You should see the needle rests on the left side in the infinity position and deflects to the zero position when the tips of the meter leads/probes are touching.
Look at the top of the scales where you see the Blue Ω symbols on the meter face.
Meter reads Infinity
The first step when using the Ohm meter is to Zero the Meter

• This is accomplished by touching / holding the tips of the Red and Black meter leads together. Then you use the Zero Ohms (Ω) Adjust knob to adjust the needle if needed to read Zero Ohms.

• Look at the next picture to see Zero Ohms on the meter scale.
Meter reads Zero Ohms
The times one scale lets you read the actual number without a multiplier.
The meter reading is most accurate if you adjust the selector switch for a reading / measurement which is mid range on the scale.

• In the next slide, you will see the selector switch and then you will see a measurement of 1.5 Ohms. Note: The selector switch must be in the X1 or times 1 position to read this value.
Resistance (Times 1 or X1) Scale
Meter reads about 1.5 Ohms
• In the next slide, you will see the selector switch in the X10 position and then you will see a measurement of 15 Ohms on the meter. What is the actual resistance which is being measured? Note: Remember; the selector switch is in the X10 or times 10 position.
Resistance (Times 10 or X10) Scale
Meter shows about 15 Ohms but is actually reading about 150 Ohms.
• The selector switch is in the X1k or times 1000 position to measure this resistance.

• The meter will indicate a reading of approximately 150Ω. Do you know what the actual measurement is?
Resistance (Times 1k or X1k) Scale
Meter reads about 150, multiply that by 1000 and you have 150K Ohms.
• The selector switch is in the X10k or times 10,000 position to measure this resistance.

• The meter will indicate a reading of approximately 15Ω. Do you know what the actual measurement is?
Resistance (Times 10k or X10k) Scale
Meter reads about 15, multiply that by 10,000 and you have 150K Ohms.
Questions?
The End

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