Analog Multimeter, Measuring AC Voltage
Basics to Measuring AC Voltage

1. The Meter lead/Probe polarity does not matter when measuring AC Voltage

2. Use the Red Meter Scale for ACV

3. There are three meter ranges you are working with
The 10 range on the AC scale is used for two positions of the selector switch.

- The 10 range is used for 10V and the 1000 Volt selector switch positions
- The 50 range is used for the 50 Volt selector switch position
- The 250 range is used for the 250 Volt selector switch position
This is the position you start with
Some guidelines to following to Protect the meter when measuring Voltage

- You do not want to “peg” the meter
  – This means have the needle at full deflection
- Start measuring at highest range of the selector switch for unknown voltages
Start high on Selector switch and adjust down to accurately measure voltage.
This is 10 ACV on the selector switch
This is the meter reading. What would you read if the selector switch was at 10 ACV?
You would use the 10 AC meter range and this would be the actual range.
This means $10 = 10$, $2 = 2$ etc...
The minor increments = .2 VAC
This meter reading is approximately 2.85 VAC. Can you see it?
This is 50 ACV on the selector switch
This is the meter reading. What would you read if the selector switch was at 50 ACV?
You would use the 50 meter range and this would be the actual range.
This means $10 = 10$, $30 = 30$ etc...
The minor increments = 1 VAC.
Do you understand why?
This meter reading is approximately 25 VAC. Can you see it?
This is 250 DCV on the selector switch
This is the meter reading. What would you read if the selector switch was at 250 ACV?
You would use the 250 meter range and this would be the actual range.
This means $50 = 50$, $150 = 150$ etc...
The minor increments $= 5$ VDC.
Do you understand why?
This meter reading is approximately 227 VAC. Can you see it?
This is 1000 DCV on the selector switch
This is the meter reading. What would you read if the selector switch was at 1000 ACV?
You would use the 10 meter range multiply by 100 to determine the actual range.
This means 2 = 200, 8 = 800 etc...
The minor increments = 20 VAC.
Do you understand why?
This meter reading is approximately 340 VAC. Can you see it?
Questions?
The End.

Developed and Produced by the Instructors in the CIE Instruction Department.

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