Analog Multimeter, Measuring DC Voltage
Basics to Measuring DC Voltage

1. The Red Meter lead/Probe is Positive
2. The Black Meter lead/Probe is Negative
3. There are three meter scales you are working with
Each range on the DC display 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 0.5V and the 50 Volt selector switch positions
- The 250 range is used for 2.5V and the 250 Volt selector switch positions
This is the position you start with
Some guideline 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
• Pay attention to circuit polarity and meter lead/probe placement
Start high on Selector switch and adjust down to accurately measure voltage.
This is 0.5 DCV on the selector switch
This is the meter reading. What would you read if the selector switch was at 0.5 DCV?
You would use the 50 meter range and divide by 100 to determine the actual range.
This means $10 = 0.1$, $20 = 0.2$ etc...
The minor increments = $0.01$ VDC
This meter reading is approximately 0.133 VDC. Can you see it?
This is 2.5 DCV on the selector switch
This is the meter reading. What would you read if the selector switch was at 2.5 DCV?
You would use the 250 meter range and divide by 100 to determine the actual range.
This means $50 = 0.5$, $150 = 1.5$ etc...
The minor increments = .01 VDC
This meter reading is approximately 0.725 VDC. Can you see it?
This is 10 DCV on the selector switch
This is the meter reading. What would you read if the selector switch was at 10 DCV?
You would use the 10 meter range and this would be the actual range.
This means 1 = 1, 8 = 8 etc...
The minor increments 0.1 = VDC
This meter reading is approximately 2.65 VDC. Can you see it?
This is 50 DCV on the selector switch
This is the meter reading. What would you read if the selector switch was at 50 DCV?
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 VDC.
Do you understand why?
This meter reading is approximately .
24 VDC. 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 DCV?
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 225 VDC. 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 DCV?
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 $= 20$ VDC.
Do you understand why?
This meter reading is approximately 930 VDC. Can you see it?
Questions?
The End

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