

In your own words, define the following terms discussed in class:

Current:

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Voltage:

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Resistance:

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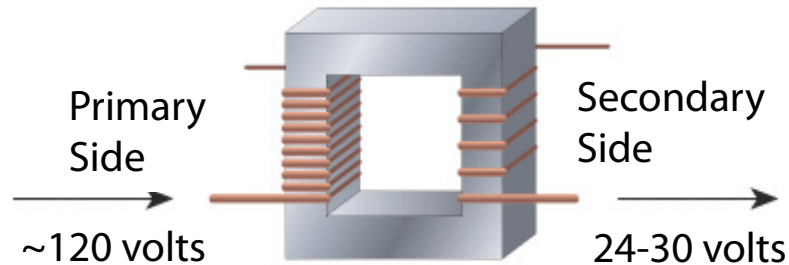
For safety, when testing resistance with a multimeter, the power to the circuit must be in what position? \_\_\_\_\_

What is the correct range of output voltage from the transformer of a typical irrigation controller? \_\_\_\_\_

Checklist of steps to take if the output voltage of the transformer is out of range:

- Check for a tripped breaker in the electrical service panel
- Verify there is not a GFCI outlet in the circuit that is tripped
- Call an electrician to troubleshoot the line-voltage power supply

## Transformer operation and resistance testing:



Resistance tests must be completed once while the item is known to be working correctly to record a baseline reading. The baseline is then used as a comparison for future testing.

The primary cause of transformer failure is \_\_\_\_\_

## Station Output Voltage Testing

Steps to take if a valve will not activate electrically:

1. Set the multimeter to measure AC Voltage
2. Manually activate the station number in question
3. Open the controller faceplate
4. Connect one testing probe to the COMMON terminal
5. Connect one testing probe to the STATION terminal in question

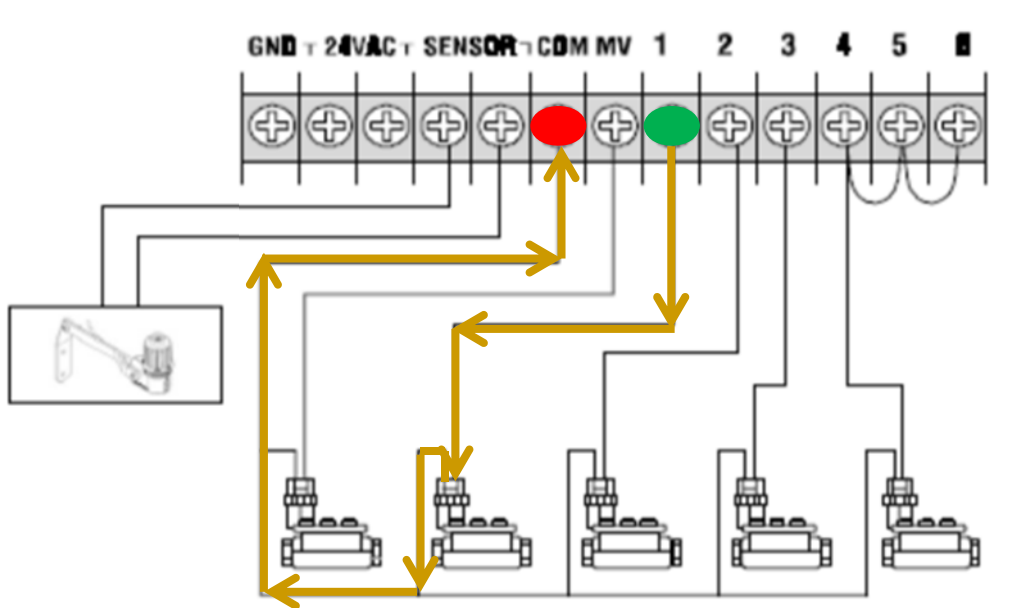
The output range for a properly functioning STATION terminal is \_\_\_\_\_

Define Phantom Voltage:

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## Electrical Circuit



## Wire Sizing

Wire sizing charts in the valve manufacturer's product catalog:

1. Manufacturer specific (current draw differences)
2. Operating one solenoid per circuit (current draw)
3. Within a specified pressure range (force against the solenoid plunger)
4. Full circuit length (station terminal → solenoid → common terminal)

## Solenoid Resistance Testing

The resistance range of a typical irrigation solenoid is \_\_\_\_\_

A resistance reading above \_\_\_\_\_ is considered an OPEN circuit, meaning it is difficult or impossible to pass electricity through the circuit. This is typically caused by splice corrosion or a cut wire.

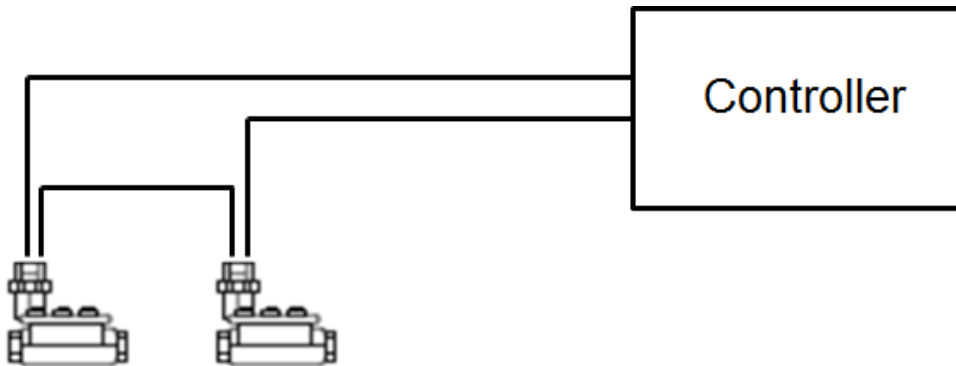
A resistance reading below \_\_\_\_\_ is considered a SHORT circuit, meaning the current is taking an unintended shorter path through the circuit. This typically occurs when wire insulation is damaged and the wires come in contact.

Multiple solenoids on one circuit

Solenoids wired in \_\_\_\_\_ will show a resistance that is higher than the normal value.

Solenoids wired in \_\_\_\_\_ will show a resistance that is lower than the normal value.

Wired in SERIES



Wired in PARALLEL

