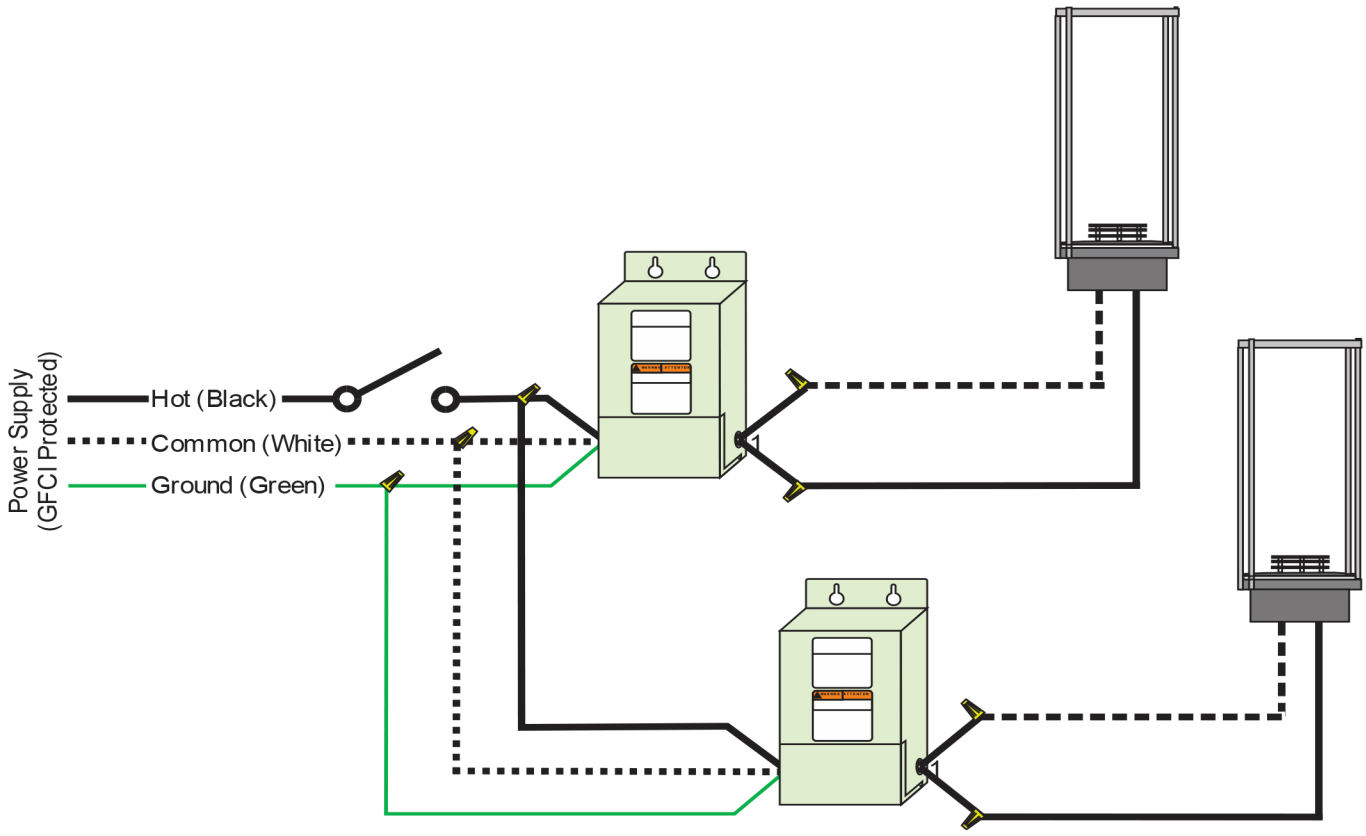
## *Wiring Multiple Transformers to One Switch*

- Multiple 24VAC transformers may be wired to a single switch (see diagram below).

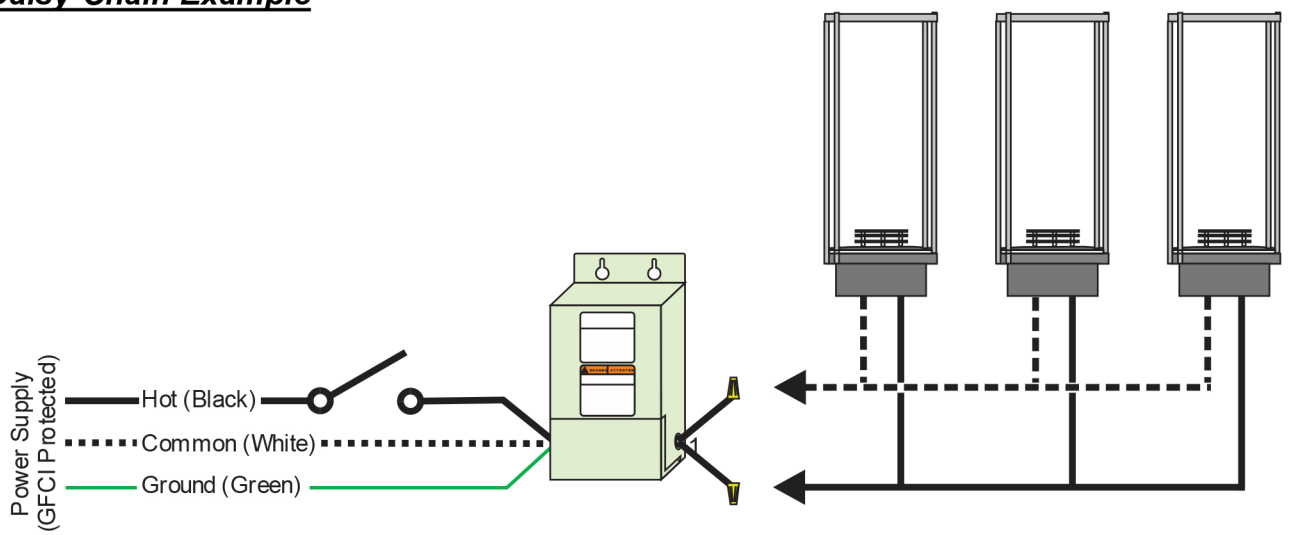


## *Wiring Multiple Torches to One Transformer*

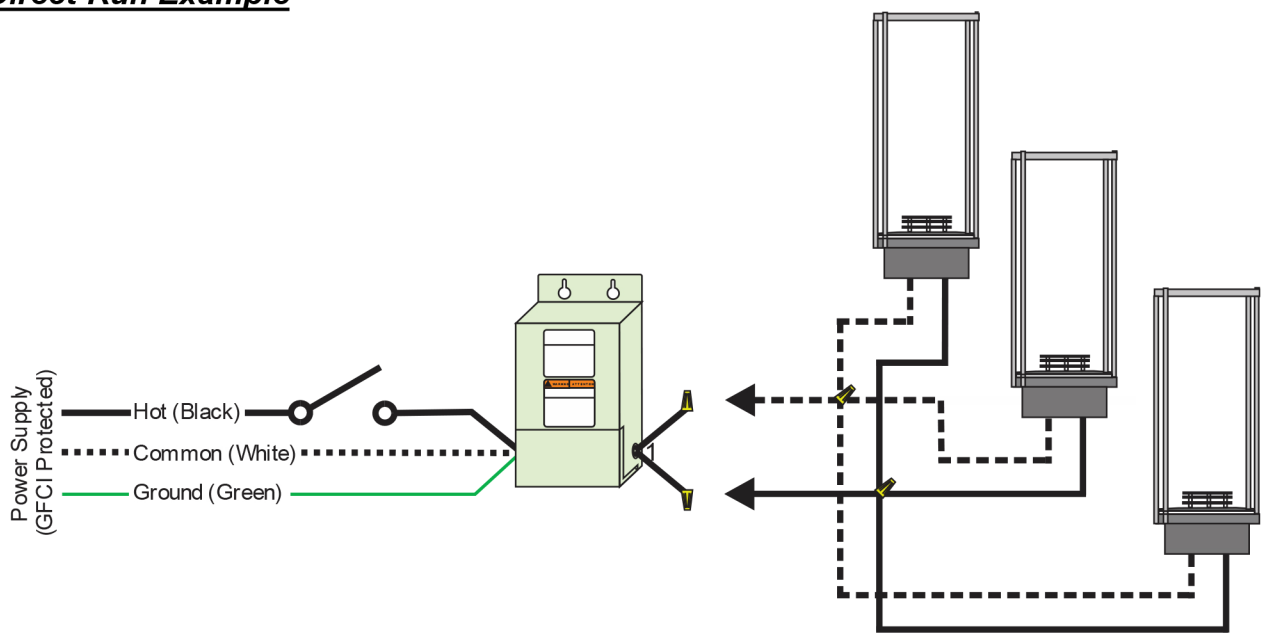
The manner in which you wire the torches to the transformer affects the maximum length of wire and wire gauge. Make sure to determine the wire configuration before installation. NOTE: You may use both direct-run and daisy-chain configurations.

**Polarity must be maintained in all multiple torch installations. Failure to maintain polarity will result in damage to the control module.**

### *Daisy-Chain Example*



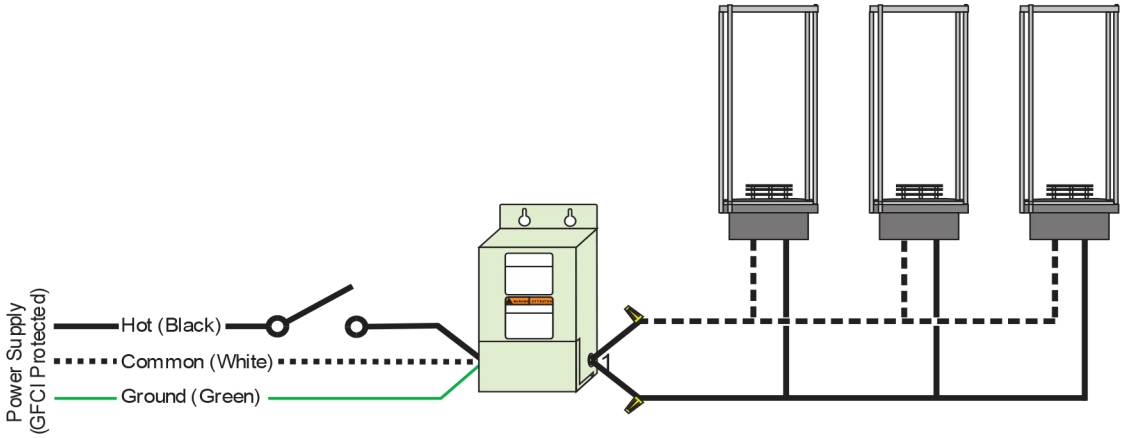

### *Direct-Run Example*



## *Daisy-Chain Wire Length Chart*

This type of wire configuration allows for torches to be wired in a series, reducing the amount of wire used. Use the charts below to determine the correct wire gauge and length. In the example below, the transformer has 3 torches on one branch.

**How to Calculate Wire Length**: Add together all of the wire length(s) used for the entire installation. If you have one 80' length and three 20' lengths, your wire length would be 140'.




### 24 Volt Lead

| Wire | | # Of Torches On Branch 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 14 G | min | 0' | 0' | 0' | 0' | 0' |
| | max | 113' | 71' | 49' | 37' | 28' |
| 12 G | min | 0' | 0' | 0' | 0' | 0' |
| | max | 173' | 108' | 75' | 55' | 43' |
| 10 G | min | 0' | 0' | 0' | 0' | 0' |
| | max | 266' | 165' | 115' | 85' | 65' |

### 26 Volt Lead*

| Wire | | # Of Torches On Branch 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 14 G | min | 27' | 10' | 1' | 0' | 0' |
| | max | 184' | 118' | 85' | 65' | 51' |
| 12 G | min | 41' | 16' | 2' | 0' | 0' |
| | max | 281' | 179' | 129' | 99' | 79' |
| 10 G | min | 63' | 23' | 3' | 0' | 0' |
| | max | 432' | 276' | 198' | 151' | 121' |

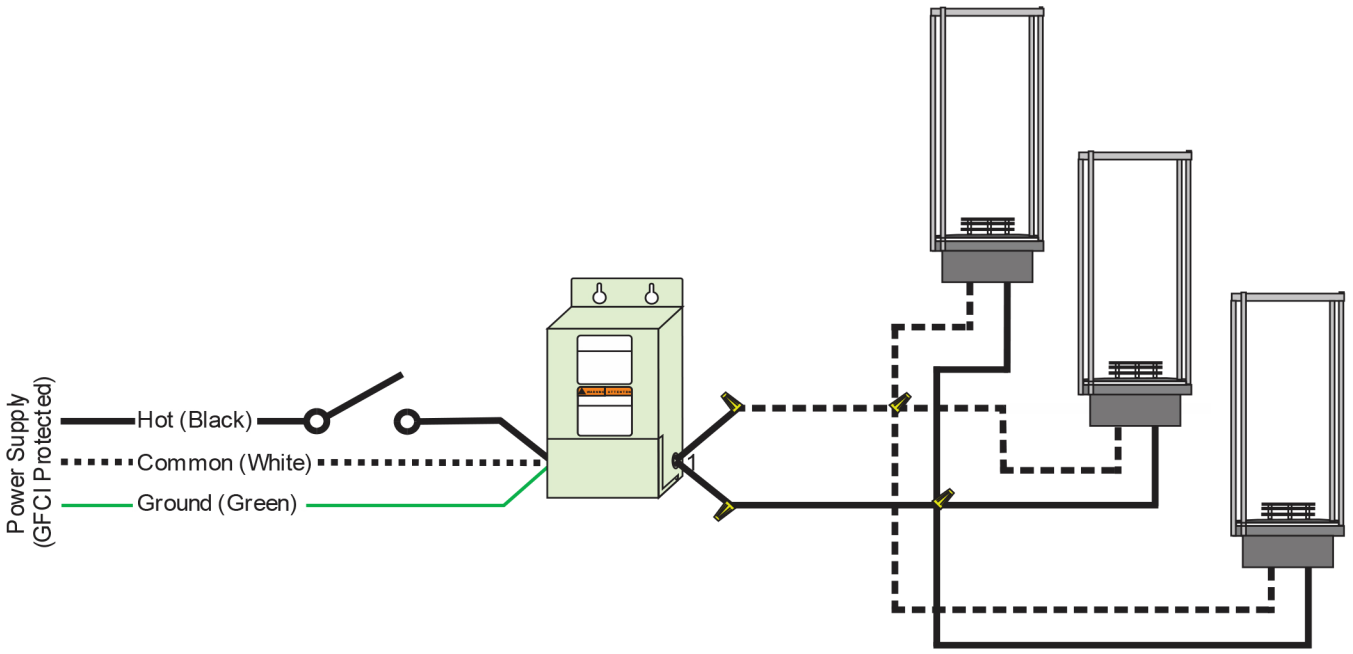
### 28 Volt Lead*

| Wire | | # Of Torches On Branch 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| 14 G | min | 104' | 62' | 40' | 27' | 19' |
| | max | 242' | 157' | 113' | 88' | 71' |
| 12 G | min | 160' | 94' | 61' | 41' | 28' |
| | max | 369' | 238' | 173' | 134' | 108' |
| 10 G | min | 245' | 144' | 93' | 63' | 43' |
| | max | 566' | 366' | 266' | 206' | 165' |

* Not available on some transformers.

## *Direct-Run Wire Length Chart*

This type of wire configuration allows for long distances between the transformer and torch (see illustration below). Use the charts below to determine the correct wire gauge and length.




**24 Volt Lead**

| Wire | | |
|---|---|---|
| 14 G | min | 0' |
| | max | 242' |
| 12 G | min | 0' |
| | max | 369' |
| 10 G | min | 0' |
| | max | 566' |

**26 Volt Lead***

| Wire | | |
|---|---|---|
| 14 G | min | 79' |
| | max | 384' |
| 12 G | min | 120' |
| | max | 584' |
| 10 G | min | 184' |
| | max | 897' |

**28 Volt Lead***

| Wire | | |
|---|---|---|
| 14 G | min | 234' |
| | max | 499' |
| 12 G | min | 356' |
| | max | 760' |
| 10 G | min | 548' |
| | max | 1168' |

* Not available on some transformers.

## *Wiring Examples:*

### *Daisy-Chain Installations:*

- When using 3 torches on one branch, 14 G wire, and 150' of wire, use the 28V Lead.
- When using 4 torches on one branch, 10 G wire, and 100' of wire, use the 24V Lead.

### *Direct Run Installations:*

- When using a torch on a 200' run, 14 G wire, use the 24V Lead.
- When using 6 torches, each on a 200' run, 14 G wire, use the 24V Lead.

**How to Determine Wire Gauge**: When purchasing your wire, it should include wire gauge (the larger the number, the smaller the diameter wire). The wire will also be printed with a gauge number (e.g. AWG#14 = 14 gauge, 10AWG = 10 gauge, etc.). Do not use wires of dissimilar gauges (do not use 14 gauge & 10 gauge wire on the same transformer).

## *Polarity*

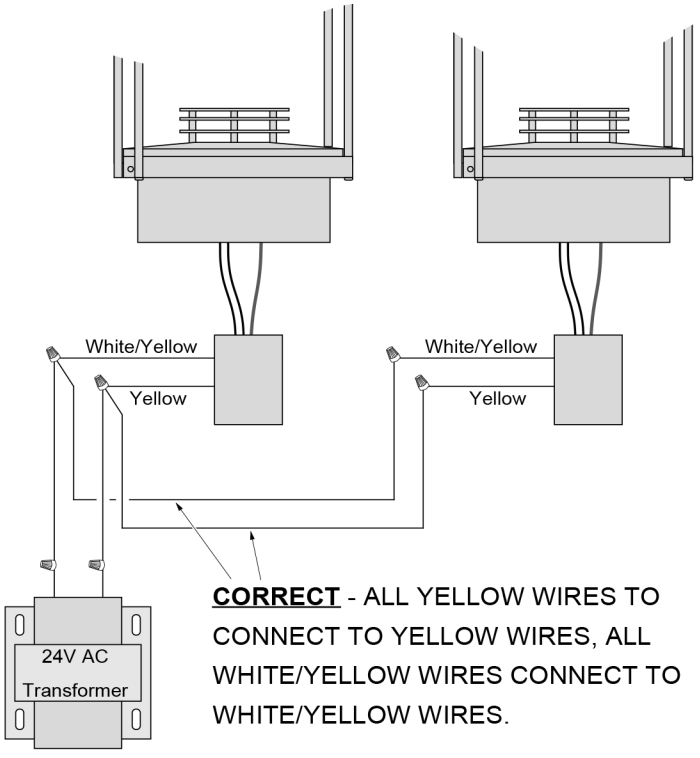
**WARNING: Make sure to keep polarity between torches the same.**

**Do not allow a yellow wire to connect to a white/yellow wire (keep polarity the same).**

**IF YOU REVERSE POLARITY, PERMANENT DAMAGE WILL occur.**

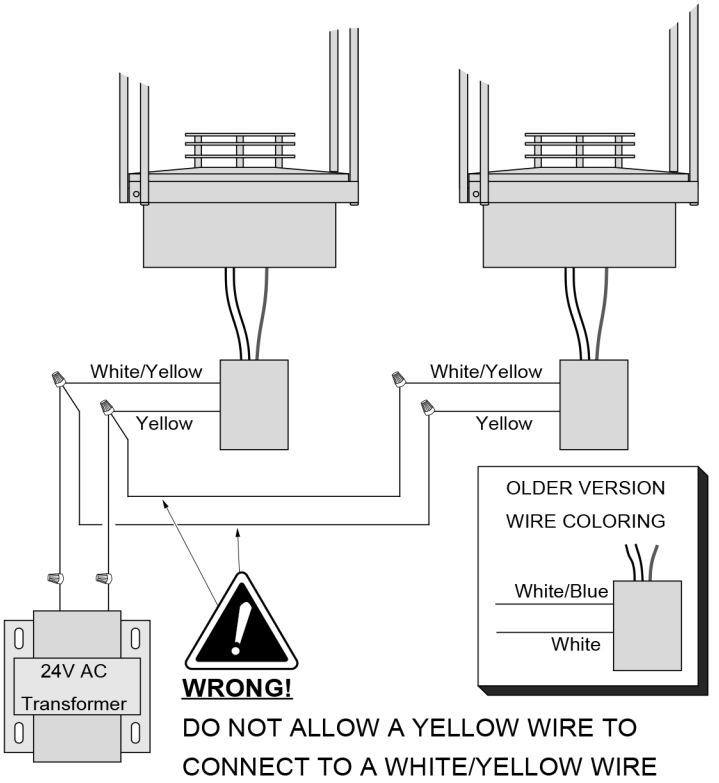
- When wiring multiple torches together using a single 24VAC transformer, **it is important that the polarity between the torches are connected in parallel** (all yellow wires connected together and all white/yellow stripe wires connected together). **Polarity between the torches and the transformer does not matter**.

# Correct




**CORRECT** - ALL YELLOW WIRES TO CONNECT TO YELLOW WIRES, ALL WHITE/YELLOW WIRES CONNECT TO WHITE/YELLOW WIRES.

# Incorrect




**WRONG!**

DO NOT ALLOW A YELLOW WIRE TO CONNECT TO A WHITE/YELLOW WIRE