

What are series circuits and how do I find them?

Series circuits operate with a single wire – no ground, no neutral. They were commonly used from the 1920s – 1970s for street lighting. Why?

- Single wire meant lower wire cost
- They could power and control hundreds of lights from one transformer
- Unlike with line voltage, there is no voltage drop so all the lights are the same brightness. This was particularly important for incandescent lighting as it's very sensitive to voltage drop.
- It's the same type of system that's used for airfield lighting.
- Series circuits provided modest efficiency increases for incandescent vs. line voltage



How can you identify customers with series circuits?

- Generally older communities
- Luminaires won't have photocells
- Remote ballasts frequently used because series ballasts were bigger (but not always)
- Group switched incandescent lighting that switches on slowly (i.e. it dims up over 1-2 seconds)
- Incandescent lamps with "V" shaped filaments
- Locate overhead wired regulator (see picture at left). Sometimes these are located indoors at a "central station" or in underground vaults
- Can be mercury or sodium or incandescent; most commonly mercury or incandescent.

Nicknames for series circuits:

- Constant Current Circuit
- 6.6 amp circuit
- High Voltage circuit
- 2400v or 4000v circuit (this is referring to the primary voltage running the circuit)
- RO or Regulated Output Circuit
- Arc Circuit

If you're unsure, take pictures of fixtures, lamps, ballasts, sockets, suspected pole-mount regulators or other equipment... send them to jim@ov20systems.com or via text to: 425-239-8238

