

NAC Circuit Voltage Drop Calculation

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|-----------------------------|-------------------------------------|------------|---------------|
| Project Name | CMP- Portland Service Center | | |
| Date | 2/6/2017 | | |
| Circuit Number | Nac#10 | | |
| Area Covered | | | |
| NAC Source Alarm Voltage | 19.1 | Wire Gauge | Resistance |
| Minimum Device Voltage | 16 | 14 | Per Kft Cable |
| Distance to first appliance | 50 | | 3.14 |
| Total Circuit Current | 1.510 | | |

| | | |
|-----------------------------------|----|------|
| Wire Gauge for balance of circuit | 14 | 3.14 |
|-----------------------------------|----|------|

| | Device Current | Distance from previous device | Voltage at Device | Drop from source | Percent Drop |
|---------------------------------|----------------|-------------------------------|-------------------|------------------|--------------|
| Circuit is within limits | | | | | |
| Appliance 1 | 0.316 | | 18.86 | 0.24 | 1.2% |
| Appliance 2 | 0.281 | 40 | 18.71 | 0.39 | 2.0% |
| Appliance 3 | 0.316 | 40 | 18.60 | 0.50 | 2.6% |
| Appliance 4 | 0.316 | 50 | 18.50 | 0.60 | 3.1% |
| Appliance 5 | 0.281 | 40 | 18.47 | 0.63 | 3.3% |
| END | | | 18.47 | 0.63 | 3.3% |
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| END | | | 18.47 | 0.63 | 3.3% |
| Totals | 1.510 | 220 | | | |

Appliance circuit voltage drop calculations start at "end of battery life" as NAC Source Alarm Voltage and use 20% below nameplate rating for Minimum Appliance Voltage.

Note. Wire resistance is based on the 2014 NEC Table 8 Uncoated DC resistance. All resistance is based on solid conductors