

## NAC Circuit Voltage Drop Calculation

Project Name	CMP- Portland Service Center		
Date	2/6/2017		
Circuit Number	Nac#6		
Area Covered			
NAC Source Alarm Voltage	19.1	Wire Gauge	Resistance Per Kft Cable
Minimum Device Voltage	16		
Distance to first appliance	100		
Total Circuit Current	1.862	14	3.14

Wire Gauge for balance of circuit	14	3.14
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	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
<b>Circuit is within limits</b>					
Appliance 1	0.346		18.52	0.58	3.1%
Appliance 2	0.397	50	18.28	0.82	4.3%
Appliance 3	0.230	45	18.12	0.98	5.1%
Appliance 4	0.179	75	17.91	1.19	6.2%
Appliance 5	0.176	25	17.85	1.25	6.5%
Appliance 6	0.179	25	17.81	1.29	6.7%
Appliance 7	0.230	45	17.76	1.34	7.0%
Appliance 8	0.125	35	17.75	1.35	7.1%
END			17.75	1.35	7.1%
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Totals	1.862	400			

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