

## NAC Circuit Voltage Drop Calculation

Project Name	Transport Leasing		
Date	6/25/15		
Circuit Number	NAC #1		
Area Covered	New Tenant Space		
NAC Source Alarm Voltage	20.4	Wire Gauge 14	Resistance Per MFt Cable 5.84
Minimum Device Voltage	16		
Distance to first appliance	100		
Total Circuit Current	1.234		

Wire Gauge for balance of circuit	14	5.84
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Circuit is within limits	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.222		19.68	0.72	3.5%
Appliance 2	0.506	100	19.09	1.31	6.4%
Appliance 3	0.506	100	18.79	1.61	7.9%
END			18.79	1.61	7.9%
END			18.79	1.61	7.9%
END			18.79	1.61	7.9%
END			18.79	1.61	7.9%
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END			18.79	1.61	7.9%
END			18.79	1.61	7.9%
END			18.79	1.61	7.9%
END			18.79	1.61	7.9%
Totals	1.234	300			

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 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

**NAC Circuit Voltage Drop Calculation**

Project Name	Transport Leasing		
Date	6/25/15		
Circuit Number	NAC #2		
Area Covered	New Tenant Space		
NAC Source Alarm Voltage	20.4	Wire Gauge	Resistance
Minimum Device Voltage	16	14	Per MFt Cable
Distance to first appliance	75		5.84
Total Circuit Current	0.574		

Wire Gauge for balance of circuit	14	5.84
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<b>Circuit is within limits</b>					
	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.064		20.15	0.25	1.2%
Appliance 2	0.078	50	20.00	0.40	2.0%
Appliance 3	0.113	75	19.81	0.59	2.9%
Appliance 4	0.113	75	19.67	0.73	3.6%
Appliance 5	0.064	50	19.61	0.79	3.9%
Appliance 6	0.064	50	19.57	0.83	4.1%
Appliance 7	0.078	50	19.55	0.85	4.2%
END			19.55	0.85	4.2%
END			19.55	0.85	4.2%
END			19.55	0.85	4.2%
END			19.55	0.85	4.2%
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END			19.55	0.85	4.2%
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END			19.55	0.85	4.2%
END			19.55	0.85	4.2%
END			19.55	0.85	4.2%
END			19.55	0.85	4.2%
Totals	0.574	425			

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 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

**NAC Circuit Voltage Drop Calculation**

Project Name	Transport Leasing		
Date	6/25/15		
Circuit Number	NAC #3		
Area Covered	John Deere & Owners Space		
NAC Source Alarm Voltage	20.4	Wire Gauge	Resistance
Minimum Device Voltage	16	14	Per MFt Cable
Distance to first appliance	75		5.84
Total Circuit Current	0.414		

Wire Gauge for balance of circuit	14	5.84
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**Circuit is within limits**

	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
Appliance 1	0.064		20.22	0.18	0.9%
Appliance 2	0.222	60	20.10	0.30	1.5%
Appliance 3	0.064	50	20.06	0.34	1.7%
Appliance 4	0.064	50	20.04	0.36	1.8%
END			20.04	0.36	1.8%
END			20.04	0.36	1.8%
END			20.04	0.36	1.8%
END			20.04	0.36	1.8%
END			20.04	0.36	1.8%
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END			20.04	0.36	1.8%
END			20.04	0.36	1.8%
END			20.04	0.36	1.8%
Totals	0.414	235			

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 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.

## NAC Circuit Voltage Drop Calculation

Project Name	Transport Leasing			
Date	6/25/15			
Circuit Number	NAC #4			
Area Covered	John Deere & Owners Space			
NAC Source Alarm Voltage	20.4		Wire Gauge	Resistance Per MFt Cable
Minimum Device Voltage	16		14	5.84
Distance to first appliance	125			
Total Circuit Current	1.168			

Wire Gauge for balance of circuit	14	5.84
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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	0.292		19.55	0.85	4.2%
Appliance 2	0.292	100	19.04	1.36	6.7%
Appliance 3	0.292	100	18.69	1.71	8.4%
Appliance 4	0.292	100	18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
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END			18.52	1.88	9.2%
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END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
Totals	1.168	425			

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 1996 NEC Table 8 Uncoated DC resistance. Solid conductors except gauges 10 and 12 which are for stranded.