Reviewed for Code Compliance
Inspections Division
Approved with Conditions

Date: 07/27/15

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	Resistance
Minimum Device Voltage	16		Gauge	Per MFt Cable
Distance to first appliance	100		14	5.84
Total Circuit Current	1.234			

Wire Gauge for balance of circuit	14	5.84

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%
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%
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.

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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	Resistance
Minimum Device Voltage	16		Gauge	Per MFt Cable
Distance to first appliance	75		14	5.84
Total Circuit Current	0.574			

Wire Gauge for balance of circuit	14	5.84

Circuit is within limits

	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%
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%
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%
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%
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.

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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	Resistance
Minimum Device Voltage	16		Gauge	Per MFt Cable
Distance to first appliance	75		14	5.84
Total Circuit Current	0.414			

Wire Gauge for balance of circuit	14	5.84

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%
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%
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%
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%
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.

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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		
Distance to first appliance	125	14	5.84
Total Circuit Current	1.168		

Wire Gauge for balance of circuit	14	5.84

Circuit is within limits

	Device Current	Distance from previous device	Voltage at Device	Drop from source	Percent Drop
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%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
END			18.52	1.88	9.2%
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.