

MARRIOTT COURTYARD - NAC2 4009 NAC						
Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment						
4009-9201	1	4009 IDNET NAC EXTENDER, 120 VAC	0.0850	0.0850	0.1850	0.1850
Panel Totals			0.0850	0.0850	0.1850	0.1850
Notification Appliances						
4098-9794	37	TRUEALARM SENSOR SOUNDER BASE	0.0000	0.0000	0.0200	0.7400
4906-9101	4	V/O MC NON-ADDRESS, RED, WALL	0.0000	0.0000	0.2520	1.0080
4906-9101	4	V/O MC NON-ADDRESS, RED, WALL	0.0000	0.0000	0.0600	0.2400
4906-9127	6	A/V MC NON-ADDRESS, RED, WALL	0.0000	0.0000	0.0750	0.4500
4906-9127	2	A/V MC NON-ADDRESS, RED, WALL	0.0000	0.0000	0.2210	0.4420
Peripheral Totals			0.0000	0.0000	2.8850	2.8850
Total Standby			0.0850	0.0850	3.6650	3.6650
Total Alarm					0.1850	0.1850

- * Current draw included under "Device Addresses Used" (See "Additional Current Draws.")
 1. 2-wire detector alarm current is included in the alarm current of the Initiating Device Circuit.
 2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Battery Set #1 (Cabinet/Charger #1)				
Standby Current	Standby Total	Alarm Current	Alarm Total	
Select ALL Power Supplies on this battery set:				
4009	0.0850	0.0850	0.1850	0.1850
Spare addressable point capacity	0% x 0 = 0.0000	x 0 = 0.0000		
Total		0.0850	0.1850	0.1850
Standby Time = 24 Hrs	x 0.0850 = 2.0400 Standby Ah			
Alarm Time = 5 Min	0.08333 x 3.065 = 0.2554 Alarm Ah			
Additional Spare Capacity = 0%	+ 2.2954			
Battery Discharge Factor = 20%	+ 2.2954			
Minimum Battery Required 2081-9272 6.2AH (2x)	+ 2.7545			
Battery Supplied 2081-9272 6.2AH (2x)				

MARRIOTT COURTYARD - NAC3 4009 NAC						
Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment						
4009-9201	1	4009 IDNET NAC EXTENDER, 120 VAC	0.0850	0.0850	0.1850	0.1850
Panel Totals			0.0850	0.0850	0.1850	0.1850
Notification Appliances						
4906-9101	2	V/O MC NON-ADDRESS, RED, WALL	0.0000	0.0000	0.0600	0.1200
4906-9127	10	A/V MC NON-ADDRESS, RED, WALL	0.0000	0.0000	0.2850	2.8500
4906-9127	6	A/V MC NON-ADDRESS, RED, WALL	0.0000	0.0000	0.0750	0.4500
4906-9127	7	A/V MC NON-ADDRESS, RED, WALL	0.0000	0.0000	0.2210	1.5470
Peripheral Totals			0.0000	0.0000	4.9670	4.9670
Total Standby			0.0850	0.0850	5.1520	5.1520
Total Alarm					0.1850	0.1850

- * Current draw included under "Device Addresses Used" (See "Additional Current Draws.")
 1. 2-wire detector alarm current is included in the alarm current of the Initiating Device Circuit.
 2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Battery Set #1 (Cabinet/Charger #1)				
Standby Current	Standby Total	Alarm Current	Alarm Total	
Select ALL Power Supplies on this battery set:				
4009	0.0850	0.0850	0.1850	0.1850
Spare addressable point capacity	0% x 0 = 0.0000	x 0 = 0.0000		
Total		0.0850	0.1850	0.1850
Standby Time = 24 Hrs	x 0.0850 = 2.0400 Standby Ah			
Alarm Time = 5 Min	0.08333 x 5.152 = 0.4293 Alarm Ah			
Additional Spare Capacity = 0%	+ 2.4693			
Battery Discharge Factor = 20%	+ 2.4693			
Minimum Battery Required 2081-9272 6.2AH (2x)	+ 2.9632			
Battery Supplied 2081-9272 6.2AH (2x)				

MARRIOTT COURTYARD - NAC4 4009 NAC						
Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment						
4009-9201	1	4009 IDNET NAC EXTENDER, 120 VAC	0.0850	0.0850	0.1850	0.1850
Panel Totals			0.0850	0.0850	0.1850	0.1850
Notification Appliances						
4098-9798	11	SSD SOUNDER BASE W/ CO MODULE	0.0000	0.0000	0.0170	0.1870
4905-9835	1	TEMPORAL CODE 4 MODULE	0.0002	0.0002	0.0150	0.0150
4906-9127	13	A/V MC NON-ADDRESS, RED, WALL	0.0000	0.0000	0.2850	3.7050
4906-9127	8	A/V MC NON-ADDRESS, RED, WALL	0.0000	0.0000	0.2210	1.7680
Peripheral Totals			0.0002	0.0002	5.6750	5.6750
Total Standby			0.0852	0.0852	5.8600	5.8600
Total Alarm					0.1850	0.1850

- * Current draw included under "Device Addresses Used" (See "Additional Current Draws.")
 1. 2-wire detector alarm current is included in the alarm current of the Initiating Device Circuit.
 2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Battery Set #1 (Cabinet/Charger #1)				
Standby Current	Standby Total	Alarm Current	Alarm Total	
Select ALL Power Supplies on this battery set:				
4009	0.0852	0.0852	0.1850	0.1850
Spare addressable point capacity	0% x 0 = 0.0000	x 0 = 0.0000		
Total		0.0852	0.1850	0.1850
Standby Time = 24 Hrs	x 0.0852 = 2.0443 Standby Ah			
Alarm Time = 5 Min	0.08333 x 5.86 = 0.4883 Alarm Ah			
Additional Spare Capacity = 0%	+ 2.5327			
Battery Discharge Factor = 20%	+ 2.5327			
Minimum Battery Required 2081-9272 6.2AH (2x)	+ 3.0392			
Battery Supplied 2081-9272 6.2AH (2x)				

MARRIOTT COURTYARD - NAC5 4009 NAC						
Module	Qty	Description	Standby Current	Total Standby	Alarm Current	Total Alarm
Panel Equipment						
4009-9201	1	4009 IDNET NAC EXTENDER, 120 VAC	0.0850	0.0850	0.1850	0.1850
Panel Totals			0.0850	0.0850	0.1850	0.1850
Notification Appliances						
4098-9794	25	TRUEALARM SENSOR SOUNDER BASE	0.0000	0.0000	0.0200	0.5000
Peripheral Totals			0.0000	0.0000	0.5000	0.5000
Total Standby			0.0850	0.0850	0.6850	0.6850
Total Alarm					0.1850	0.1850

- * Current draw included under "Device Addresses Used" (See "Additional Current Draws.")
 1. 2-wire detector alarm current is included in the alarm current of the Initiating Device Circuit.
 2. Backup Amplifier assumes Main Amplifier alarm current on failure.

Battery Set #1 (Cabinet/Charger #1)				
Standby Current	Standby Total	Alarm Current	Alarm Total	
Select ALL Power Supplies on this battery set:				
4009	0.0850	0.0850	0.1850	0.1850
Spare addressable point capacity	0% x 0 = 0.0000	x 0 = 0.0000		
Total		0.0850	0.1850	0.1850
Standby Time = 24 Hrs	x 0.0850 = 2.0400 Standby Ah			
Alarm Time = 5 Min	0.08333 x 0.685 = 0.0571 Alarm Ah			
Additional Spare Capacity = 0%	+ 2.0971			
Battery Discharge Factor = 20%	+ 2.0971			
Minimum Battery Required 2081-9272 6.2AH (2x)	+ 2.5165			
Battery Supplied 2081-9272 6.2AH (2x)				

MARRIOTT COURTYARD - NAC2 4009 NAC VOLTAGE DROPS														
WIRE RESISTANCE BASED ON TABLE 8 FROM NATIONAL ELECTRICAL CODE (UNCOATED SOLID COPPER WIRE) @ 75 Celsius														
Notification Circuit Description	Power Supply	Panel Circuit	Plan Ckt.	Dist. (Ft)	Wire Gauge	Wire Res. / Ft. (R)	Total Alarm (A)	V. Drop (A)(2)(R)	Volt @ End	% Volt Drop	Min Device Voltage	Max Distance	PID	Candel
5TH FL CORRIDOR/GUEST ROOMS	4009	SIG1	NAC1V1	283	14ga	0.0031	1.070	1.728	17.772	8.86%	16vdc	533 Ft.	4906-9101	15cd
5TH FL CORRIDOR/GUEST ROOMS	4009	SIG2	NAC1V2	287	14ga	0.0031	1.070	1.886	17.614	9.67%	16vdc	533 Ft.	4906-9101	30cd
5TH FL SOUNDER BASES	4009	SIG3	NAC1V3	391	14ga	0.0031	0.420	1.008	18.492	5.17%	16vdc	582 Ft.	4906-9101	75cd
5TH FL SOUNDER BASES	4009	SIG4	NAC1V4	372	14ga	0.0031	0.320	0.731	18.769	3.75%	16vdc	763 Ft.	4906-9101	110cd

NOTE:
 LUMP SUM METHOD WAS USED TO CALCULATE ALLOWABLE VOLTAGE DROP. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY, TAKING INTO CONSIDERATION THAT THE ACTUAL INSTALLED CIRCUIT ROUTING MAY DIFFER FROM WHAT IS SHOWN ON THE SHOP DRAWINGS. IF THE ACTUAL CIRCUIT LENGTH IS GOING TO EXCEED THE MAXIMUM ALLOWABLE CIRCUIT LENGTH, CONTACT YOUR LOCAL SIMPLEXGRINNELL DISTRICT OFFICE.

MARRIOTT COURTYARD - NAC3 4009 NAC VOLTAGE DROPS														
WIRE RESISTANCE BASED ON TABLE 8 FROM NATIONAL ELECTRICAL CODE (UNCOATED SOLID COPPER WIRE) @ 75 Celsius														
Notification Circuit Description	Power Supply	Panel Circuit	Plan Ckt.	Dist. (Ft)	Wire Gauge	Wire Res. / Ft. (R)	Total Alarm (A)	V. Drop (A)(2)(R)	Volt @ End	% Volt Drop	Min Device Voltage	Max Distance	PID	Candel
6TH FL CORRIDORS	4009	SIG1	NAC3V1	453	14ga	0.0031	0.450	1.252	18.248	6.42%	16vdc	1267 Ft.	4906-9101	15cd
6TH FL RESIDENCE UNITS	4009	SIG2	NAC3V2	243	14ga	0.0031	1.702	2.539	16.961	13.02%	16vdc	335 Ft.	4906-9101	30cd
6TH FL RESIDENCE UNITS	4009	SIG3	NAC3V3	339	14ga	0.0031	1.518	3.160	16.340	16.20%	16vdc	376 Ft.	4906-9101	75cd
6TH FL RESIDENCE UNITS	4009	SIG4	NAC3V4	366	14ga	0.0031	1.297	2.915	16.585	14.95%	16vdc	440 Ft.	4906-9101	110cd

NOTE:
 LUMP SUM METHOD WAS USED TO CALCULATE ALLOWABLE VOLTAGE DROP. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY, TAKING INTO CONSIDERATION THAT THE ACTUAL INSTALLED CIRCUIT ROUTING MAY DIFFER FROM WHAT IS SHOWN ON THE SHOP DRAWINGS. IF THE ACTUAL CIRCUIT LENGTH IS GOING TO EXCEED THE MAXIMUM ALLOWABLE CIRCUIT LENGTH, CONTACT YOUR LOCAL SIMPLEXGRINNELL DISTRICT OFFICE.



MARRIOTT COURTYARD - NAC4 4009 NAC VOLTAGE DROPS														
WIRE RESISTANCE BASED ON TABLE 8 FROM NATIONAL ELECTRICAL CODE (UNCOATED SOLID COPPER WIRE) @ 75 Celsius														
Notification Circuit Description	Power Supply	Panel Circuit	Plan Ckt.	Dist. (Ft)	Wire Gauge	Wire Res. / Ft. (R)	Total Alarm (A)	V. Drop (A)(2)(R)	Volt @ End	% Volt Drop	Min Device Voltage	Max Distance	PID	Candel
6TH FL RESIDENCE UNITS	4009	SIG1	NAC4V1	283	14ga	0.0031	1.867	3.244	16.256	16.64%	16vdc	305 Ft.	4906-9101	15cd
6TH FL RESIDENCE UNITS	4009	SIG2	NAC4V2	288	14ga	0.0031	1.803	3.188	16.312	16.35%	16vdc	316 Ft.	4906-9101	30cd
6TH FL RESIDENCE UNITS	4009	SIG3	NAC4V3	244	14ga	0.0031	1.803	2.701	16.799	13.85%	16vdc	316 Ft.	4906-9101	75cd
SOUNDER/CO BASES	4009	SIG4	NAC4V4	455	14ga	0.0031	0.202	0.564	18.936	2.89%	16vdc	1209 Ft.	4906-9101	110cd

NOTE:
 LUMP SUM METHOD WAS USED TO CALCULATE ALLOWABLE VOLTAGE DROP. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY, TAKING INTO CONSIDERATION THAT THE ACTUAL INSTALLED CIRCUIT ROUTING MAY DIFFER FROM WHAT IS SHOWN ON THE SHOP DRAWINGS. IF THE ACTUAL CIRCUIT LENGTH IS GOING TO EXCEED THE MAXIMUM ALLOWABLE CIRCUIT LENGTH, CONTACT YOUR LOCAL SIMPLEXGRINNELL DISTRICT OFFICE.

MARRIOTT COURTYARD - NAC5 4009 NAC VOLTAGE DROPS														
WIRE RESISTANCE BASED ON TABLE 8 FROM NATIONAL ELECTRICAL CODE (UNCOATED SOLID COPPER WIRE) @ 75 Celsius														
Notification Circuit Description	Power Supply	Panel Circuit	Plan Ckt.	Dist. (Ft)	Wire Gauge	Wire Res. / Ft. (R)	Total Alarm (A)	V. Drop (A)(2)(R)	Volt @ End	% Volt Drop	Min Device Voltage	Max Distance	PID	Candel
2ND FL SOUNDER BASES	4009	SIG1	V1	426	14ga	0.0031	0.500	1.308	18.192	6.71%	16vdc	489 Ft.	4098-9794	SOUNDER
SPARE	4009	SIG2	V2		14ga	0.0031	0.000	0.000	19.500	0.00%	16vdc	0 Ft.		0.0000
SPARE	4009	SIG3	V3		14ga	0.0031	0.000	0.000	19.500	0.00%	16vdc	0 Ft.		0.0000
SPARE	4009	SIG4	V4		14ga	0.0031	0.000	0.000	19.500	0.00%	16vdc	0 Ft.		0.0200

NOTE:
 LUMP SUM METHOD WAS USED TO CALCULATE ALLOWABLE VOLTAGE DROP. THIS METHOD ALLOWS FOR A SMALL MARGIN OF SAFETY, TAKING INTO CONSIDERATION THAT THE ACTUAL INSTALLED CIRCUIT ROUTING MAY DIFFER FROM WHAT IS SHOWN ON THE SHOP DRAWINGS. IF THE ACTUAL CIRCUIT LENGTH IS GOING TO EXCEED THE MAXIMUM ALLOWABLE CIRCUIT LENGTH, CONTACT YOUR LOCAL SIMPLEXGRINNELL DISTRICT OFFICE.

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CHG BY	SK				
DATE	11/08/13	NO.	1	REVISION DESCRIPTION	PER SUBMITTAL REVIEW DATED 10/31/13
FIRE ALARM & AREA OF RESCUE SYSTEMS CHARTS AND CALCULATIONS NAC2 & NAC3 MARRIOTT COURTYARD PORTLAND MAINE					
DRAWN BY:	STEPHENS	DATE:	8/27/13		
CHECKED BY:	KALAFARSKI	DATE:	9/4/13		
PROJECT NUMBER:	972833401				
SHEET TITLE:	FIRE ALARM SYSTEM CHARTS AND CALCULATIONS				
SHEET NUMBER:	FA-603				