

HYATT PLACE NAC 3 TEL DAT 725 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
4009-9807	1	NAC CARD, 4PT, IDNET	0.0400	0.0400	0.0400	0.0400
Panel Totals				0.1250		0.2250
Notification Appliances						
4098-9794	25	TRUEALARM SENSOR SOUNDER BASE	0.0000	0.0000	0.0200	0.5000
4901-9820	2	TRUEALERT HORN, NON-ADDRESSABLE	0.0000	0.0000	0.0220	0.0440
4906-9101	3	V/O MC NON-ADDRESS, RED, WALL	15	0.0000	0.0600	0.1800
4906-9109	6	HICD VO MC NONADDRESS RED WALL	177	0.0000	0.3900	2.3400
4906-9127	10	A/V MC NON-ADDRESS, RED, WALL	30	0.0000	0.1160	1.1600
Peripheral Totals				0.0000		4.2240
Total Standby			0.1250			4.4490
Total Alarm						4.4490

- * 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)					
Current	Total	Alarm	Current	Total	Alarm
Select ALL Power Supplies on this battery set:					
4009	0.1250		4.4490		
Spare addressable point capacity	0% x 0 = 0.0000		x 0 = 0.0000		
Total			0.1250		4.4490
Standby Time = 24 Hrs x 0.1250 = 3.0000 Standby Ah					
Alarm Time = 5 Min 0.08333 x 4.449 = 0.3708 Alarm Ah					
Additional Spare Capacity = 0% + 0.0000					
Battery Discharge Factor = 20% + 3.708					
Minimum Battery Required 2081-9272 6.2AH (2x) + 0.6742					
Battery Supplied 2081-9272 6.2AH (2x) 4.0449					

HYATT PLACE NAC4 SPRINKLER RM 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		0.1850
Notification Appliances						
4906-9127	1	A/V MC NON-ADDRESS, RED, WALL	75	0.0000	0.2210	0.2210
Peripheral Totals				0.0000		0.2210
Total Standby			0.0850			0.4060
Total Alarm						0.4060

- * 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)					
Current	Total	Alarm	Current	Total	Alarm
Select ALL Power Supplies on this battery set:					
4009	0.0850		0.4060		
Spare addressable point capacity	0% x 0 = 0.0000		x 0 = 0.0000		
Total			0.0850		0.4060
Standby Time = 24 Hrs x 0.0850 = 2.0400 Standby Ah					
Alarm Time = 5 Min 0.08333 x 0.406 = 0.0338 Alarm Ah					
Additional Spare Capacity = 0% + 0.0000					
Battery Discharge Factor = 20% + 2.0738					
Minimum Battery Required 2081-9272 6.2AH (2x) + 0.4148					
Battery Supplied 2081-9272 6.2AH (2x) 2.4886					

HYATT PLACE NAC 1A 3RD FL TEL DAT 325 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		0.1850
Notification Appliances						
4906-9101	4	V/O MC NON-ADDRESS, RED, WALL	15	0.0000	0.0600	0.2400
4906-9109	4	HICD VO MC NONADDRESS RED WALL	177	0.0000	0.3900	1.5600
Peripheral Totals				0.0000		1.8000
Total Standby			0.0850			1.9850
Total Alarm						1.9850

- * 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)					
Current	Total	Alarm	Current	Total	Alarm
Select ALL Power Supplies on this battery set:					
4009	0.0850		1.9850		
Spare addressable point capacity	0% x 0 = 0.0000		x 0 = 0.0000		
Total			0.0850		1.9850
Standby Time = 24 Hrs x 0.0850 = 2.0400 Standby Ah					
Alarm Time = 5 Min 0.08333 x 1.985 = 0.1654 Alarm Ah					
Additional Spare Capacity = 0% + 0.0000					
Battery Discharge Factor = 20% + 2.2054					
Minimum Battery Required 2081-9272 6.2AH (2x) + 0.4411					
Battery Supplied 2081-9272 6.2AH (2x) 2.6465					

HYATT PLACE NAC 2A 5TH FL TEL DAT 525 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
4009-9807	1	NAC CARD, 4PT, IDNET	0.0400	0.0400	0.0400	0.0400
Panel Totals				0.1250		0.2250
Notification Appliances						
4906-9101	6	V/O MC NON-ADDRESS, RED, WALL	15	0.0000	0.0600	0.3600
4906-9109	6	HICD VO MC NONADDRESS RED WALL	177	0.0000	0.3900	2.3400
Peripheral Totals				0.0000		2.7000
Total Standby			0.1250			2.9250
Total Alarm						2.9250

- * 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)					
Current	Total	Alarm	Current	Total	Alarm
Select ALL Power Supplies on this battery set:					
4009	0.1250		2.9250		
Spare addressable point capacity	0% x 0 = 0.0000		x 0 = 0.0000		
Total			0.1250		2.9250
Standby Time = 24 Hrs x 0.1250 = 3.0000 Standby Ah					
Alarm Time = 5 Min 0.08333 x 2.925 = 0.2438 Alarm Ah					
Additional Spare Capacity = 0% + 0.0000					
Battery Discharge Factor = 20% + 3.2438					
Minimum Battery Required 2081-9272 6.2AH (2x) + 0.6488					
Battery Supplied 2081-9272 6.2AH (2x) 3.8925					

HYATT PLACE NAC 3 TEL DAT 725 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. (Ω)	Total Alarm (A)	V. Drop (ΔV)(%)	Volt @ End	% Volt Drop	Min Device Voltage	Max Distance
4009	SIG1	NAC3V1	283	14ga	0.0031	0.8021	0.980	18.500	5.02%	16vdc	947 Ft.
4009	SIG2	NAC3V2	278	14ga	0.0031	0.8021	1.028	18.472	5.27%	16vdc	947 Ft.
4009	SIG3	NAC3V3	454	14ga	0.0031	0.500	1.394	18.106	7.15%	16vdc	489 Ft.
4009	SIG4	NAC3V4	291	14ga	0.0031	0.840	1.501	17.999	7.70%	16vdc	679 Ft.
4009	SIG5	NAC3V5	125	14ga	0.0031	0.840	0.645	18.855	3.31%	16vdc	679 Ft.
4009	SIG6	NAC3V6	162	14ga	0.0031	0.840	0.836	18.664	4.28%	16vdc	679 Ft.
4009	SIG7	NAC3V7	14ga	0.0031	0.000	0.000	19.500	0.00%	16vdc	0 Ft.	
4009	SIG8	NAC3V8	14ga	0.0031	0.000	0.000	19.500	0.00%	16vdc	0 Ft.	

- 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.

HYATT PLACE NAC4 SPRINKLER RM 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. (Ω)	Total Alarm (A)	V. Drop (ΔV)(%)	Volt @ End	% Volt Drop	Min Device Voltage	Max Distance
4009	SIG1	V1	85	14ga	0.0031	0.221	0.115	19.385	0.59%	16vdc	2579 Ft.
4009	SIG2	V2	14ga	0.0031	0.000	0.000	19.500	0.00%	16vdc	0 Ft.	
4009	SIG3	V3	14ga	0.0031	0.000	0.000	19.500	0.00%	16vdc	0 Ft.	
4009	SIG4	V4	14ga	0.0031	0.000	0.000	19.500	0.00%	16vdc	0 Ft.	

- NOTE:
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HYATT PLACE NAC 1A 3RD FL TEL DAT 325 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. (Ω)	Total Alarm (A)	V. Drop (ΔV)(%)	Volt @ End	% Volt Drop	Min Device Voltage	Max Distance
4009	SIG1	NAC1AV1	80	14ga	0.0031	0.450	0.221	19.279	1.13%	16vdc	1267 Ft.
4009	SIG2	NAC1AV2	125	14ga	0.0031	0.450	0.345	19.155	1.77%	16vdc	1267 Ft.
4009	SIG3	NAC1AV3	100	14ga	0.0031	0.450	0.276	19.224	1.42%	16vdc	1267 Ft.
4009	SIG4	NAC1AV4	258	14ga	0.0031	0.450	0.713	18.787	3.66%	16vdc	1267 Ft.

- NOTE:
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HYATT PLACE NAC 2A 5TH FL TEL DAT 525 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. (Ω)	Total Alarm (A)	V. Drop (ΔV)(%)	Volt @ End	% Volt Drop	Min Device Voltage	Max Distance
4009	SIG1	NAC2AV1	109	14ga	0.0031	0.450	0.30	19.191	1.54%	16vdc	1267 Ft.
4009	SIG2	NAC2AV2	217	14ga	0.0031	0.450	0.600	18.900	3.07%	16vdc	1267 Ft.
4009	SIG3	NAC2AV3	136	14ga	0.0031	0.450	0.376	19.124	1.93%	16vdc	1267 Ft.
4009	SIG4	NAC2AV4	169	14ga	0.0031	0.450	0.467	19.033	2.39%	16vdc	1267 Ft.
4009	SIG5	NAC2AV5	132	14ga	0.0031	0.450	0.365	19.135	1.87%	16vdc	1267 Ft.
4009	SIG6	NAC2AV6	158	14ga	0.0031	0.450	0.437	19.063	2.24%	16vdc	1267 Ft.
4009	SIG7	NAC2AV7	14ga	0.0031	0.000	0.000	19.500	0.00%	16vdc	0 Ft.	
4009	SIG8	NAC2AV8	14ga	0.0031	0.000	0.000	19.500	0.00%	16vdc	0 Ft.	

- 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.

NO.	DATE	REVISION DESCRIPTION
1	8/14/13	REISED PER ENGINEERS REVIEW COMMENTS DATED 7/19/13 & 8/5/13
2	9/10/13	REISED PER SUBMITTAL REVIEW DATED 8/29/13
3	10/07/13	REISED PER SUBMITTAL REVIEW DATED 10/1/13

FIRE ALARM & AREA OF REFUGE SYSTEMS
 CHARTS & CALCULATIONS NACS 3, 4, 1A, 2A
 HYATT PLACE PORTLAND - OLD PORT
 433 FORD STREET
 PORTLAND, ME

DRAWN BY: LORION	DATE: 6/14/13
CHECKED BY: KALAFARSKI	DATE: 7/12/13
PROJECT NUMBER: 971237001	
SHEET TITLE: FIRE ALARM SYSTEM CHARTS & CALCULATIONS	
SHEET NUMBER: FA-603	