

Luminato
Portland, Maine
Power Supply Standby Battery Calculations
Booster #1

Strobe Circuit Draw Remote Booster Panel

	G1F-HDVM (Horn/Strobe)				G1F-VM (Strobe Only)		G4LFWF-H (Low Freq Horn)	WP H/S	Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
	15cd	30cd	75cd	110cd	110cd	110cd		110cd			
	88	109	193	248	71	191	112	180			
FACP									0.0700	0.2700	
Circuit1	1						7			0.8720	65.12 %
Circuit2	1	1					8			1.0930	56.28 %
Circuit3	1						6			0.7600	69.60 %
Circuit4	1						7			0.8720	65.12 %
									0.0700	3.8670	61.33 %
									Total Quiescent	Total Alarm	Remaining

All currents are expressed as mA.
 Max current per ckt = 2.5 Amps. Max current per panel = 10 Amps.

Total Quiescent Amp x Time Required (24 Hours) 1.680 AmpHr
 Total Alarm Amp x Time Required (15 Minutes) 0.967 AmpHr
 Total Battery Required 2.647 AmpHr
 Total Battery Required + 20% **3.176 AmpHr**
 Battery Supplied **7.2 AmpHr**

NAC Circuit Voltage Drop/Maximum Length Calculations

Formulas Used:
 $R_t = (D) \times (R_w) / 1000'$
 $V_d = (R_t) \times (I_t)$
 Substitute for (R_t) and solve for D
 $D = ((4.0) \times (1000)) / ((R_w) \times (I_t))$

R_t = Total Circuit Resistance
D = Total Circuit Length (Feet)
R_w = Wire Resistance (Ω) per 1000' Pair (Ohms)
V_d = Circuit Voltage Drop (Max allowed is 4.0Vdc)
I_t = Total Circuit Current

Notes:

1. NAC Circuit terminal voltage 24Vdc.
2. A maximum allowable voltage drop of 4Vdc will provide a minimum of 20 Vdc per circuit.
3. Current values listed per device are based on 20Vdc.

	G1F-HDVM (Horn/Strobe)				(G1F-VM Strobe)		G4LFWF-H	WP H/S	Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	110cd	75cd	110cd		12AWG (3.5)	14AWG (5.2)
FACP	88	137	193	248	71	191	188	180			
Circuit1	1	0	0	0	0	0	7	0	0.8720	1310.62	882.15 Ft
Circuit2	1	1	0	0	0	0	8	0	1.0930	1045.61	703.78 Ft
Circuit3	1	0	0	0	0	0	6	0	0.7600	1503.76	1012.15 Ft
Circuit4	1	0	0	0	0	0	7	0	0.8720	1310.62	882.15 Ft

**Luminato
Portland, Maine
Power Supply Standby Battery Calculations
Booster #2**

Strobe Circuit Draw Remote Booster Panel

	G1F-HDVM (Horn/Strobe)				G1F-VM (Strobe Only)		G4LFWF-H (Low Freq Horn)	WP H/S	Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
	15cd	30cd	75cd	110cd	110cd	110cd		110cd			
	88	109	193	248	71	191	112	180			
FACP									0.0700	0.2700	
Circuit1	1						7			0.8720	65.12 %
Circuit2	1						8			0.9840	60.64 %
Circuit3	1						6			0.7600	69.60 %
Circuit4	1						7	3		1.4120	43.52 %
									0.0700	4.2980	57.02 %
									Total Quiescent	Total Alarm	Remaining

All currents are expressed as mA.
Max current per ckt = 2.5 Amps. Max current per panel = 10 Amps.

Total Quiescent Amp x Time Required (24 Hours) 1.680 AmpHr
 Total Alarm Amp x Time Required (15 Minutes) 1.075 AmpHr
 Total Battery Required 2.755 AmpHr
 Total Battery Required + 20% **3.305 AmpHr**
 Battery Supplied **7.2 AmpHr**

NAC Circuit Voltage Drop/Maximum Length Calculations

Formulas Used:
 $R_t = (D) \times (R_w) / 1000'$
 $V_d = (R_t) \times (I_t)$
 Substitute for (R_t) and solve for D
 $D = ((4.0) \times (1000)) / ((R_w) \times (I_t))$

R_t = Total Circuit Resistance
D = Total Circuit Length (Feet)
R_w = Wire Resistance (Ω) per 1000' Pair (Ohms)
V_d = Circuit Voltage Drop (Max allowed is 4.0Vdc)
I_t = Total Circuit Current

Notes:

1. NAC Circuit terminal voltage 24Vdc.
2. A maximum allowable voltage drop of 4Vdc will provide a minimum of 20 Vdc per circuit.
3. Current values listed per device are based on 20Vdc.

	G1F-HDVM (Horn/Strobe)				(G1F-VM Strobe)		G4LFWF-H	WP H/S	Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	110cd	75cd	110cd		12AWG (3.5)	14AWG (5.2)
FACP	88	137	193	248	71	191	188	180			
Circuit1	1	0	0	0	0	0	7	0	0.8720	1310.62	882.15 Ft
Circuit2	1	0	0	0	0	0	8	0	0.9840	1161.44	781.74 Ft
Circuit3	1	0	0	0	0	0	6	0	0.7600	1503.76	1012.15 Ft
Circuit4	1	0	0	0	0	0	7	3	1.4120	809.39	544.78 Ft