

**One City Center
Floors 9 & 13 Renovation
Portland, ME**

Booster Power Supply Standby Battery Calculations

HPFF8

(mA)	E50-24MCW-FR (Speaker/Strobe Wall Mt.)				E60-24MCC-FR (Speaker/Strobe Ceiling Mt.)				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	95cd			
Panel	41	63	109	140	45	70	119	159	0.0700		
Circuit 1	10	1	1						0.0000	0.5820	76.72 %
Circuit 2	3						2	3	0.0000	0.8380	66.48 %
									0.0000	0.0000	100.00 %
									0.0000	0.0000	100.00 %
									0.0700	1.4200	82.25 %
									Total Quiescent	Total Alarm	Remaining % Panel

All currents are expressed as mA.

Max current per ckt = 2.5 Amps. Max current per panel = 8 Amps.

Total Quiescent Amp x Time Required (24 Hours) 1.680 AmpHr
 Total Alarm Amp x Time Required (15 Minutes) 0.355 AmpHr
 Total Battery Required 2.035 AmpHr
 Total Battery Required + 20% Battery Provided **2.442 AmpHr**
7AH

Formulas Used:

$$R_t = (D) \times (R_w) / 1000'$$

$$V_d = (R_t) \times (I_t)$$

Substitute for (R_t) and solve for D

$$D = ((4.0) \times (1000)) / ((R_w) \times (I_t))$$

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.

HORN/STROBE CIRCUIT MAX WIRE LENGTH CALCULATION

(mA)	E50-24MCW-FR (Speaker/Strobe Wall Mt.)				E60-24MCC-FR (Speaker/Strobe Ceiling Mt.)				Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	95cd		12AWG (3.5)	14AWG (5.2)
Panel	41	63	109	140	45	70	119	159	Amp	Max Length (Ft)	Max Length (Ft)
Circuit 1	10	1	1	0	0	0	0	0	0.5820	1963.67	1321.70
Circuit 2	3	0	0	0	0	0	2	3	0.8380	1363.79	917.94
	0	0	0	0	0	0	0	0	0.0000	#DIV/0!	#DIV/0!
	0	0	0	0	0	0	0	0	0.0000	#DIV/0!	#DIV/0!

Booster Power Supply Standby Battery Calculations

HPFF8

(mA)	E50-24MCW-FR (Speaker/Strobe Wall Mt.)				E60-24MCC-FR (Speaker/Strobe Ceiling Mt.)				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	95cd				
Panel	41	63	109	140	45	70	119	159	0.0700			
Circuit 1	7	3	2						0.0000	0.6940	72.24 %	
Circuit 2	6	1	3				3	1	0.0000	1.1520	53.92 %	
									0.0000	0.0000	100.00 %	
									0.0000	0.0000	100.00 %	
									0.0700	1.8460	76.93 %	Remaining % Panel
									Total Quiescent	Total Alarm		

All currents are expressed as mA.

Max current per ckt = 2.5 Amps. Max current per panel = 8 Amps.

Total Quiescent Amp x Time Required (24 Hours) 1.680 AmpHr
 Total Alarm Amp x Time Required (15 Minutes) 0.462 AmpHr
 Total Battery Required 2.142 AmpHr
 Total Battery Required + 20% **2.570** AmpHr
 Battery Provided **7AH**

Formulas Used:

$$R_t = (D) \times (R_w) / 1000'$$

$$V_d = (R_t) \times (I_t)$$

Substitute for (R_t) and solve for D

$$D = ((4.0) \times (1000)) / ((R_w) \times (I_t))$$

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	15cd	30cd	75cd	110cd	15cd	30cd	75cd	95cd		12AWG (3.5)	14AWG (5.2)
	41	63	109	140	45	70	119	159	Amp	Max Length (Ft)	Max Length (Ft)
Circuit 1	7	3	2	0	0	0	0	0	0.6940	1646.77	1108.40
Circuit 2	6	1	3	0	0	0	3	1	1.1520	992.06	667.74
	0	0	0	0	0	0	0	0	0.0000	#DIV/0!	#DIV/0!
	0	0	0	0	0	0	0	0	0.0000	#DIV/0!	#DIV/0!