

**UNE- Abplanalp Library Portland, ME
Booster Power Supply Standby Battery Calculations**

BPS10A Strobe Booster Panel

	G1RF-HDVM (Wall Mount Horn/Strobe)				G1RF-VM (Wall Mount Strobe Only)				GCF-HDVM (Ceiling Mount Horn/Strobe)				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd	15cd	30cd	75cd	95cd				
Panel	88	109	193	248	71	98	188	240	91	124	219	257	0.0700	0.2700		
Circuit 1	3		2		2					1	2			1.3540	45.84 %	
Circuit 2	4			2	3						1			1.2800	48.80 %	
Circuit 3	3				1						3			0.9920	60.32 %	
Circuit 4	1		4		3		1							1.2610	49.56 %	
													0.0700	5.1570	48.43 %	Remaining % Panel
													Total Quiesce	Total Alarm		

All currents are expressed as mA.
Max current per ckt = 2.5 Amps. Max current per panel = 10.0 Amps.

Total Quiescent Amp x Time Required (24 Hours) 1.680 AmpHr
 Total Alarm Amp x Time Required (15 Minutes) 1.289 AmpHr
 Total Battery Required 2.969 AmpHr
 Total Battery Required + 20% **3.563 AmpHr**
 Battery Supplied **7.2 AmpHr**

Strobe 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 BPS Power supply 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.
- 4 BPS Power supply output is straight DC (not regulated).

STROBE CIRCUIT MAX WIRE LENGTH CALCULATION

	G1RF-HDVM (Wall Mount Horn Strobe)				G1RF-VM (Wall Mount Strobe Only)				GCF-HDVM (Ceiling Mount Horn/Strobe)				Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd	15cd	30cd	75cd	95cd		12AWG (3.5)	14AWG (5.2)
Panel	88	109	193	248	71	98	188	240	91	124	219	257	Amp	Max Length (Ft)	Max Length (Ft)
Circuit 1	3	0	2	0	2	0	0	0	0	1	2	0	0.7070	1616.49	1088.02
Circuit 2	4	0	0	2	3	0	0	0	0	0	1	0	0.9580	1192.96	802.95
Circuit 3	3	0	0	0	1	0	0	0	0	0	3	0	0.2690	4248.54	2859.59
Circuit 4	1	0	4	0	3	0	1	0	0	0	0	0	1.0860	1052.35	708.32