

161 Marginal Way
 Portland, Maine
 Power Supply Standby Battery Calculations

Strobe Circuit Draw Remote Booster Panel 1

	G1RF-HDVM Horn/Strobe			757-4A	G1RF-VM Strobe				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
	15cd	30cd	75cd	75cd	15cd	30cd	75cd	110cd			
	81	94	161	159	59	82	152	191			
Ckt 1-1			3				7		0.0700	0.2700	38.12 %
Ckt 1-2			4	1			4			1.4470	42.12 %
Ckt 1-3			2				7			1.3860	44.56 %
Ckt 1-4			3				7			1.5470	38.12 %
									0.0700	6.1970	38.03 %
									Total Quiescent	Total Alarm	

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)	1.549 AmpHr
Total Battery Required	3.229 AmpHr
Total Battery Required + 20%	3.875 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.

	G1RF-HDVM Horn/Strobe			757-4A	G1RF-VM Strobe				Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	75cd	15cd	30cd	75cd	110cd		12AWG (3.5)	14AWG (5.2)
	88	109	193	159	71	98	188	240			
Ckt 1-1	0	0	3	0	0	0	7	0	1.5470	738.76	497.24 Ft
Ckt 1-2	0	0	4	1	0	0	4	0	1.4470	789.81	531.60 Ft
Ckt 1-3	0	0	2	0	0	0	7	0	1.3860	824.57	555.00 Ft
Ckt 1-4	0	0	3	0	0	0	7	0	1.5470	738.76	497.24 Ft

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Strobe Circuit Draw Remote Booster Panel 2

G1RF-HDVM Horn/Strobe		757-4A		G1RF-VM Strobe				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
15cd	30cd	75cd	75cd	15cd	30cd	75cd	110cd			
81	94	161	159	59	82	152	191			
								0.0700	0.2700	
Ckt 2-1		5	1			4			1.6160	35.36 %
Ckt 2-2		4	1			5			1.5990	36.04 %
Ckt 2-3									0.0000	100.00 %
Ckt 2-4									0.0000	100.00 %
								0.0700	3.4850	65.15 %
								Total Quiescent	Total Alarm	

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) 0.871 AmpHr
 Total Battery Required 2.551 AmpHr
 Total Battery Required + 20% **3.062** 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.

G1RF-HDVM Horn/Strobe		757-4A		G1RF-VM Strobe				Total Circuit Current	Ω per 1000' Pair			
15cd	30cd	75cd	75cd	15cd	30cd	75cd	110cd		12AWG (3.5)	14AWG (5.2)		
88	109	193	159	71	98	188	240					
Ckt 2-1	0	0	5	1	0	0	4	0	1.6160	707.21	476.01	Ft
Ckt 2-2	0	0	4	1	0	0	5	0	1.5990	714.73	481.07	Ft
Ckt 2-3	0	0	0	0	0	0	0	0	0.0000	#DIV/0!	#DIV/0!	Ft
Ckt 2-4	0	0	0	0	0	0	0	0	0.0000	#DIV/0!	#DIV/0!	Ft

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Strobe Circuit Draw Remote Booster Panel 3

	G1RF-HDVM Horn/Strobe				G1RF-VM Strobe				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd			
	81	94	161	203	59	82	152	191			
Ckt 3-1			4				5		0.0700	0.2700	
Ckt 3-2			2				7			1.4040	43.84 %
Ckt 3-3			3				7			1.3820	44.72 %
Ckt 3-4			4				5			1.5470	38.12 %
										1.4040	43.84 %
									0.0700	6.0070	39.93 %
									Total Quiescent	Total Alarm	

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)	1.502 AmpHr
Total Battery Required	3.182 AmpHr
Total Battery Required + 20%	3.818 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.

	G1RF-HDVM Horn/Strobe				G1RF-VM Strobe				Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd		12AWG (3.5)	14AWG (5.2)
	88	109	193	248	71	98	188	240			
Ckt 3-1	0	0	4	0	0	0	5	0	1.4040	814.00	547.89 Ft
Ckt 3-2	0	0	2	0	0	0	7	0	1.3820	826.96	556.61 Ft
Ckt 3-3	0	0	3	0	0	0	7	0	1.5470	738.76	497.24 Ft
Ckt 3-4	0	0	4	0	0	0	5	0	1.4040	814.00	547.89 Ft

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Strobe Circuit Draw Remote Booster Panel 4

	G1RF-HDVM Horn/Strobe				G1RF-VM Strobe				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd			
	81	94	161	203	59	82	152	191			
Ckt 4-1			5				4		0.0700	1.4130	43.48 %
Ckt 4-2			2				8			1.5340	38.64 %
Ckt 4-3										0.0000	100.00 %
Ckt 4-4										0.0000	100.00 %
									0.0700	3.2170	67.83 %
									Total Quiescent	Total Alarm	

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)	0.804 AmpHr
Total Battery Required	2.484 AmpHr
Total Battery Required + 20%	2.981 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.

	G1RF-HDVM Horn/Strobe				G1RF-VM Strobe				Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd		12AWG (3.5)	14AWG (5.2)
	88	109	193	248	71	98	188	240			
Ckt 4-1	0	0	5	0	0	0	4	0	1.4130	808.82	544.40 Ft
Ckt 4-2	0	0	2	0	0	0	8	0	1.5340	745.02	501.45 Ft
Ckt 4-3	0	0	0	0	0	0	0	0	0.0000	#DIV/0!	#DIV/0! Ft
Ckt 4-4	0	0	0	0	0	0	0	0	0.0000	#DIV/0!	#DIV/0! Ft

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Strobe Circuit Draw Remote Booster Panel 5

	G1RF-HDVM Horn/Strobe				G1RF-VM Strobe				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd			
	81	94	161	203	59	82	152	191			
Ckt 5-1			8				1		0.0700	0.2700	
Ckt 5-2			6				4			1.4400	42.40 %
Ckt 5-3			6				3			1.5620	37.52 %
Ckt 5-4			4				5			1.4220	43.12 %
										1.4040	43.84 %
									0.0700	6.0980	39.02 %
									Total Quiescent	Total Alarm	

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)	1.525 AmpHr
Total Battery Required	3.205 AmpHr
Total Battery Required + 20%	3.845 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.

	G1RF-HDVM Horn/Strobe				G1RF-VM Strobe				Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd		12AWG (3.5)	14AWG (5.2)
	88	109	193	248	71	98	188	240			
Ckt 5-1	0	0	8	0	0	0	1	0	1.4400	793.65	534.19 Ft
Ckt 5-2	0	0	6	0	0	0	4	0	1.5620	731.66	492.47 Ft
Ckt 5-3	0	0	6	0	0	0	3	0	1.4220	803.70	540.95 Ft
Ckt 5-4	0	0	4	0	0	0	5	0	1.4040	814.00	547.89 Ft

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Strobe Circuit Draw Remote Booster Panel 6

	G1RF-HDVM Horn/Strobe				G1RF-VM Strobe				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd			
	81	94	161	203	59	82	152	191			
Ckt 6-1			4				6		0.0700	0.2700	
Ckt 6-2			4				6			1.5560	37.76 %
Ckt 6-3			2				7			1.5480	38.08 %
Ckt 6-4										1.3860	44.56 %
										0.0000	100.00 %
									0.0700	4.7600	52.40 %
									Total Quiescent	Total Alarm	

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)	1.190 AmpHr
Total Battery Required	2.870 AmpHr
Total Battery Required + 20%	3.444 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.

	G1RF-HDVM Horn/Strobe				G1RF-VM Strobe				Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd		12AWG (3.5)	14AWG (5.2)
	88	109	193	248	71	98	188	240			
Ckt 6-1	0	0	4	0	0	0	6	0	1.5560	734.48	494.36 Ft
Ckt 6-2	0	0	4	0	0	0	6	0	1.5480	738.28	496.92 Ft
Ckt 6-3	0	0	2	0	0	0	7	0	1.3860	824.57	555.00 Ft
Ckt 6-4	0	0	0	0	0	0	0	0	0.0000	#DIV/0!	#DIV/0! Ft

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Strobe Circuit Draw Remote Booster Panel 7

	G1RF-HDVM Horn/Strobe				G1RF-VM Strobe				Quiescent Current	Alarm Current	Remaining % of Ckt Capacity
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd			
	81	94	161	203	59	82	152	191			
Ckt 7-1			5				7		0.0700	0.2700	25.24 %
Ckt 7-2			5				7			1.8590	25.64 %
Ckt 7-3			9				4			2.0570	17.72 %
Ckt 7-4			9				3			1.9050	23.80 %
									0.0700	7.9600	20.40 %
									Total Quiescent	Total Alarm	

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) 1.990 AmpHr
 Total Battery Required 3.670 AmpHr
 Total Battery Required + 20% **4.404** 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.

	G1RF-HDVM Horn/Strobe				G1RF-VM Strobe				Total Circuit Current	Ω per 1000' Pair	
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	110cd		12AWG (3.5)	14AWG (5.2)
	88	109	193	248	71	98	188	240			
Ckt 7-1	0	0	5	0	0	0	7	0	1.8690	611.48	411.57 Ft
Ckt 7-2	0	0	5	0	0	0	7	0	1.8590	614.77	413.79 Ft
Ckt 7-3	0	0	9	0	0	0	4	0	2.0570	555.59	373.96 Ft
Ckt 7-4	0	0	9	0	0	0	3	0	1.9050	599.93	403.80 Ft