Fine Arts Gallery
Portland, Maine
NAC Circuit Voltage Drop/Maximum Length Calculations

Formulas Used:

R_t = (D) x (R_w) / 1000'	R_t = Total Circuit Resistance
V_d = (R_t) x (I_t)	D = Total Circuit Length (Feet)
Substitute for (R_t) and solve for D	R_w = Wire Resistance (Ω) per 1000' Pair (Ohms)
D = ((4.0) x (1000)) / ((R_w) x (I_t))	V_D = Circuit Voltage Drop (Max allowed is 4.0Vdc)

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 24Vdc.**

STROBE CIRCUIT MAX WIRE LENGTH CALCULATION

	G1RF-HDVM				G1RF-VM			WP HS	Ceiling	Total Circuit Current	Ω per 1000' Pair
	15cd	30cd	75cd	110cd	15cd	30cd		110cd	95cd		
	81	94	161	203	59	82		180	152		14AWG (5.2)
Basement	1	1	0	0	1	0	0	0	0	0.2340	3287.31 Ft
1st Fl	1	0	0	1	0	0	0	0	0	0.2840	2708.56 Ft
2nd Fl	0	0	0	0	0	0	0	2	2	0.3040	2530.36 Ft
	0	0	0	0	0	0	0	0	0	0.0000	#DIV/0! Ft