

VOLTAGE DROP CALCULATIONS

SAMPLE VOLTAGE DROP CALCULATION

Circuit Wire Gauge = 14 Awg Solid Wire Resistance = 3.19 ohm per 1000ft
 Device Operating Voltage = 16-33 Vdc
 Starting Voltage = 20.4 Vdc

POWER SUPPLY	VO-WALL (SW)				VO-CEILING (SCW)				H/S-WALL (P2W)				H/S CEILING (PC2W)				Spare	Spare	DOOR	WP	PS	TTL	TTL	TOTAL	CRT
	15cd	30cd	75cd	110cd	15cd	30cd	75cd	95cd	15cd	30cd	75cd	110cd	15cd	30cd	75cd	95cd						LOAD	WIRE	DROP	EOLV
FACP (panel P)	0.059	0.082	0.152	0.191	0.063	0.090	0.168	0.194	0.081	0.094	0.161	0.203	0.080	0.108	0.185	0.212	0.000	0.000	0.015	0.168	0.006	AMPS	FT	VDC	VDC
P1	1	1	1	1																		0.484	100	0.309	20.091
P2					1	1	1	1	1	1	1	1										1.054	325	2.185	18.215
P3													1	1	1	1						0.585	100	0.373	20.027
P4	1	1	1	1																		0.484	100	0.309	20.091
TOTALS	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	2.607	625		
Power Supply 1A																									
1A1																						0.000		0.000	20.400
1A2																						0.000		0.000	20.400
1A3																						0.000		0.000	20.400
1A4																						0.000		0.000	20.400
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.000	0		

Format shown is a sample format the contractor may format calculations as they like as long as the the following information is clearly indicated in the calculations:

SEE HIGHLIGHTED ITEMS ABOVE FOR EXAMPE OF EACH NUMBERED ITEM BELOW

1. Starting Voltage of 20.4 per ANSI/UL 894 Standard for Control Units and Accessories for Fire Alarm Systems
 Note: Higher values can be used as long as manufacturers supporting documentation is provide to support the starting value used.
 Lower starting values are always acceptable.
2. Wire gauge and type, solid or stranded, standard resistance value per distance and device operating voltage range.
2. Breakdown of devices by type and candela similar to the above, that clearly indicates visual only, audio/visual, mounting type, candela and current draw.
3. Circuit identifier and quantity of each type of device on the circuit.
4. Clearly indicates the following totals: circuit load, wire length for ciruict, voltage drop and circuit end of line voltage (EOLV) and the calculation units.
5. Clearly indicates total load on power supply.