



FIRE ALARM PLAN
SCALE: 1/8"=1'-0"



Existing FCP Battery Calculation

6/12/2013

PROJECT NAME: CROSS INSURANCE
Required Standby Time: 24 Hours
Required Alarm Time: 5 Minutes

Regulated Load in Standby

Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
Existing Vista-1287BP System	2	X	X
New 41935N Two Zone SIM (for Pull Stations)	33	X	X
New 51925D Smoke Detectors	33	X	X
TOTAL STANDBY LOAD			0.09540

Regulated Load in Alarm

Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
Existing Vista-1287BP System	2	X	X
New 41935N Two Zone SIM (for Pull Stations)	33	X	X
New 51925D Smoke Detectors	33	X	X
TOTAL ALARM LOAD			0.09540

Battery Requirements

Standby Load	0.09540	X	Required Standby Time in Hours	24	2.28960
Alarm Load	0.09540	X	Required Alarm Time in Hours	0.08333	0.00795
Total Amper Hours (before derating factor)					2.29755
Derating Factor					1.2
TOTAL AMPERE HOURS REQUIRED					2.75706

BATTERIES TO BE PROVIDED (2 - 12V)

NOTE: THE ABOVE BATTERY CALCULATION IS A COMBINED TOTAL OF THE ADDITIONAL LOADS THAT WILL BE ADDED FROM THE SCOPE OF THIS PROJECT. FIELD VERIFY THE SIZE OF THE EXISTING BATTERIES AND UPSIZE ACCORDINGLY.

FPS1 Battery Calculation

6/12/2013

PROJECT NAME: CROSS INSURANCE
Required Standby Time: 24 Hours
Required Alarm Time: 5 Minutes

Regulated Load in Standby

Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
Atroxix AL802ULADA	1	X	X
TOTAL STANDBY LOAD			0.09000

Regulated Load in Alarm

Device Type	Number of Devices	Current (Amps)	Total Current (Amps)
Atroxix AL802ULADA	1	X	X
FPS1-1	1	X	X
FPS1-2	1	X	X
TOTAL ALARM LOAD			1.68500

Battery Requirements

Standby Load	0.09000	X	Required Standby Time in Hours	24	2.16000
Alarm Load	1.68500	X	Required Alarm Time in Hours	0.08333	0.14042
Total Amper Hours (before derating factor)					2.30042
Derating Factor					1.2
TOTAL AMPERE HOURS REQUIRED					2.76050

BATTERIES TO BE PROVIDED (2 - 12V) 7 AH

MAC Circuit Voltage Drop Calculation

6/12/2013

Project Name	CROSS INSURANCE
Circuit Number	FPS1-1
Nominal System Voltage	20.4 volts
Minimum Device Voltage	16 volts
Distance from source to 1st device	5
Wire Gauge for balance of circuit	14
Max Output Current	1.5 amps
Total Circuit Current	0.980 amps

Circuit is within limits

Device	Distance previous device	Voltage at source	Drop	Percent
Device 1	0.107	20.37	0.03	0%
Device 2	0.14	20.26	0.14	1%
Device 3	0.068	20.20	0.20	1%
Device 4	0.068	20.16	0.20	1%
Device 5	0.068	20.06	0.34	2%
Device 6	0.068	19.99	0.41	2%
Device 7	0.079	19.94	0.46	2%
Device 8	0.079	19.84	0.56	3%
Device 9	0.079	19.81	0.59	3%
Device 10	0.079	19.77	0.63	3%
Device 11	0.107	19.76	0.64	3%
Device 12	0.079	19.75	0.65	3%
Totals		219		

MAC Circuit Voltage Drop Calculation

6/12/2013

Project Name	CROSS INSURANCE
Circuit Number	FPS1-2
Nominal System Voltage	20.4 volts
Minimum Device Voltage	16 volts
Distance from source to 1st device	35
Wire Gauge for balance of circuit	14
Max Output Current	1.5 amps
Total Circuit Current	0.530 amps

Circuit is within limits

Device	Distance previous device	Voltage at source	Drop	Percent
Device 1	0.107	20.29	0.11	1%
Device 2	0.079	20.27	0.13	1%
Device 3	0.079	20.23	0.17	1%
Device 4	0.107	20.16	0.24	1%
Device 5	0.079	20.13	0.27	1%
Device 6	0.079	20.12	0.28	1%
Totals		144		

RESERVED FOR CITY STAMP

REVISION	DESCRIPTION	DATE
0	ISSUED FOR REVIEW & APPROVAL	6/13/2013

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CROSS INSURANCE CONGRESS STREET PORTLAND, MAINE 04101 CALCULATIONS & FIRE ALARM PLAN

DRAWN	JPB
UNICAD JOB #13294	
CHECKED	WAYNE B. HAWES
DATE	6/12/2013
REVISION	0
SCALE	1/8"=1'-0"