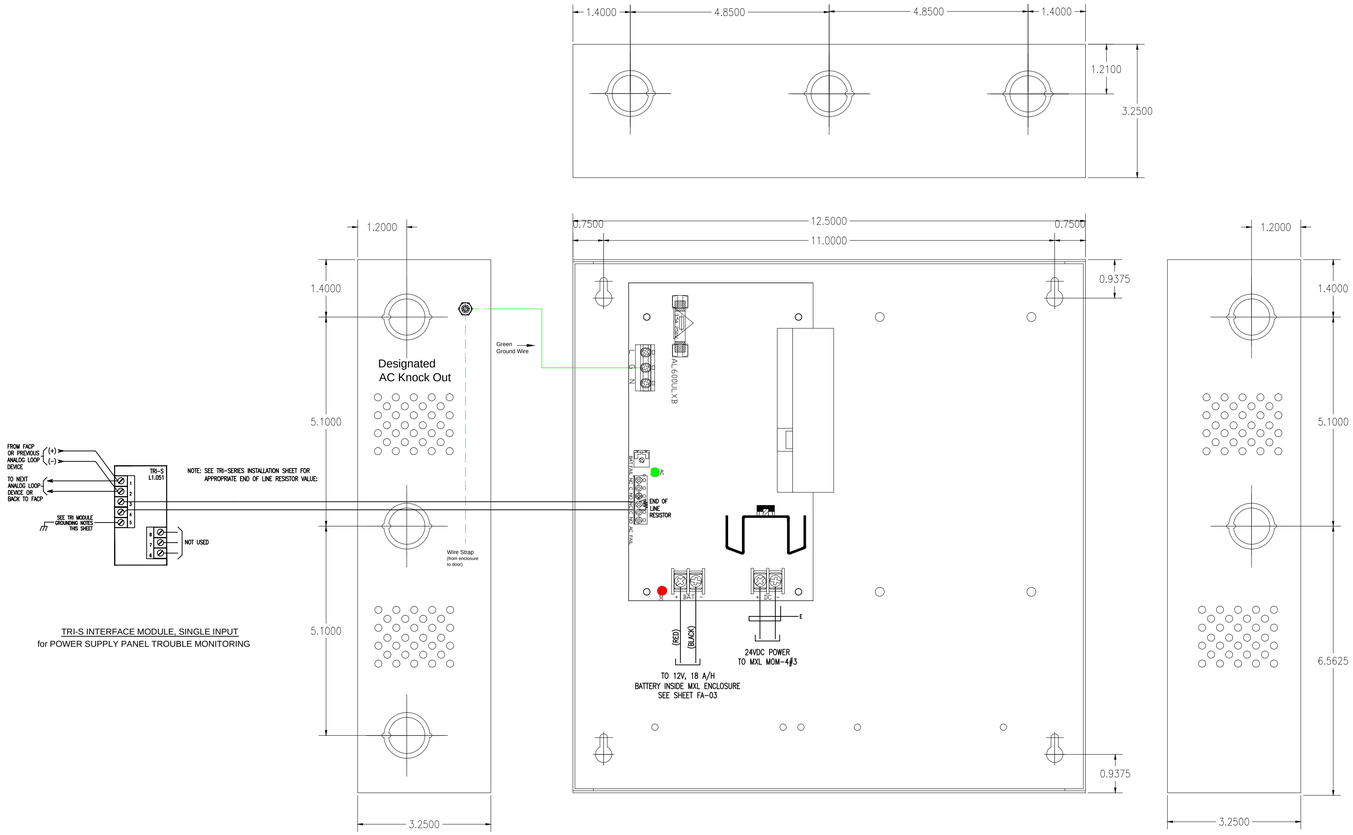
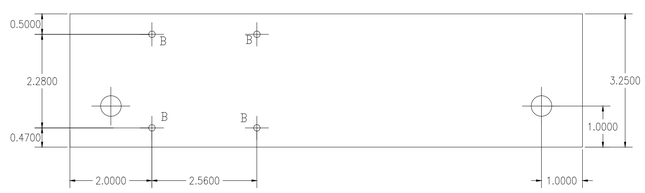


TRI-S INTERFACE MODULE, SINGLE INPUT
for POWER SUPPLY PANEL TROUBLE MONITORING



POWER SUPPLY PANEL (ALTRONIX AL600ULXR)
LOCATED AT FLOOR 1 ELECTRICAL ROOM 118A

PSP(AL600ULXR) BATTERY CALCULATION

SUPERVISORY CURRENT					
DESCRIPTION	QTY	MODULE CURRENT	EOL CURRENT	DEVICE CURRENT	TOTAL ROW CURRENT
CSM-4 CONTROLLABLE SIGNAL MODULE	2	0.010			0.020
12mA per NAC circuit (2 ckt. per card)	4		0.012		0.048
CZM-4 CONVENTIONAL ZONE MODULE	1	0.055			0.055
3mA per Zone (4 zones per card)	4			0.003	0.012
NIM-1W NETWORK INTERFACE MODULE	1	0.070			0.070
D2300CPS FIBER OPTIC MODULE	2	0.057			0.114
TOTAL CURRENT					0.319
ALARM CURRENT					

NOTIFICATION CIRCUITS			TOTAL CKT CURRENT LOAD
PSP	3.13	CIRCUIT AV9	1.191
		CIRCUIT AV10	0.859
		CIRCUIT AV11	1.078
		TOTAL ALARM CURRENT (AMPS)	3.128

SUMMARY

A = TOTAL SUPERVISORY CURRENT
x SUPERVISORY TIME REQUIRED
0.319 AMPS x 24 HR
= 7.656 (AMP/HR)

B = TOTAL ALARM CURRENT
x ALARM TIME REQUIRED
3.128 AMPS x .083 HR
= 0.782 (AMP/HR)

C = A + B
= 8.438 (AMP/HR)

SUPERVISORY TIME REQUIRED---------24 HR
ALARM TIME REQUIRED-----5 MINS. or .083 HR

BATTERY PROVIDED..... PS-12180
BATTERY SIZE..... 18 (AMP/HR)

TOTAL SYSTEM REQUIRED (A/H)
= 8.438 AMP/HOUR
BATTERY RESERVE AFTER
24 HOURS SUPERVISORY
& 5 MINUTES ALARM (AMP/HOUR)

= 9.562 AMP/HOUR

MXL PANEL ACTUAL VOLTAGE DROP CALCULATIONS
WIRE SIZE USED: #14 AWG DROP: 5 FEET

CKT	DISTANCE (ft.)	CURRENT LOAD (amps)	VOLTAGE DROP	REMAINING VOLTAGE
AV9	500	1.191	3.130	20.870
AV10	610	0.859	2.754	21.246
AV11	700	1.078	3.966	20.034

NOTIFICATION APPLIANCE CIRCUIT
POWER REQUIREMENTS & VOLTAGE DROP CALCULATIONS

DESCRIPTION	CURRENT PER APPLIANCE	# OF APPLIANCES CIRCUIT AV9	CIRCUIT AV10	CIRCUIT AV11							
SIEMENS ZR WALL STROBE 15 cd	0.064	1	1	1							
SIEMENS ZR WALL STROBE 30 cd	0.098	0	0	3							
SIEMENS ZR WALL STROBE 75 cd	0.175	0	1	0							
SIEMENS ZR WALL STROBE 110 cd	0.233	0	0	0							
SIEMENS ZH WALL HORN/STROBE 15 cd	0.078	8	4	3							
SIEMENS ZH WALL HORN/STROBE 30 cd	0.113	1	1	1							
SIEMENS ZH WALL HORN/STROBE 75 cd	0.195	2	1	1							
SIEMENS ZH WALL HORN/STROBE 110 cd	0.259	0	0	0							
SIEMENS AS WP WALL HORN/STROBE	0.178	0	0	1							
TOTAL CIRCUIT CURRENT		1.191	0.859	1.078							

{(I) (D) (21.6)}/CM
WHERE: I = CIRCUIT POWER LOAD 21.6 = CONSTANT
D = CONDUCTOR ONE WAY DISTANCE CM = CROSS SECTION AREA OF WIRE (4110 FOR AWG#14)

NAC AV9: {(1.191 AMP)(500 FT)(21.6)}/4110 VOLTAGE DROP: 3.130 VOLTS REMAINING VOLTAGE: 20.870 VOLTS

NAC AV10: {(0.859 AMP)(610 FT)(21.6)}/4110 VOLTAGE DROP: 2.754 VOLTS REMAINING VOLTAGE: 21.246 VOLTS

NAC AV11: {(1.078 AMP)(700 FT)(21.6)}/4110 VOLTAGE DROP: 3.966 VOLTS REMAINING VOLTAGE: 20.034 VOLTS

THE CIRCUITS' AVAILABLE VOLTAGE IS ABOVE THE MINIMUM LISTED VOLTAGE FOR THE APPLIANCES.

PROFESSIONAL SEAL (IF REVISION, APPLIES ONLY TO REVISED WORK)

ISSUE (PROGRESS, ESTIMATE, BID, CONSTRUCTION, CONFORMED, REVISION, RECORD)

AS BUILT
—
08/28/13

REVISION NUMBER	DRAWN BY	CHECKED BY	APPR'D BY	DATE	REMARKS
–	DSV	LDD	MCD	08/28/13	AS BUILT FROM A/E RECORD DWGS

74 FIRE ALARM SYSTEM
POWER SUPPLY PANEL
AND CALCULATIONS

UNIVERSITY OF CALIFORNIA
LAWRENCE BERKELEY NATIONAL LABORATORY
FACILITIES DIVISION

DRAWN BY DSV	DATE 08/28/13	
CHECKED BY LDD	09/03/2013	
APPROVED BY MCD	09/03/2013	
SCALE AS NOTED		
DRAWING NO. 4B74E304	SHEET 3 OF 20	
PROJECT NO. FN9200		