

Permitting and Inspections Department
Michael A. Russell, MS, Director**Fire Alarm Permit Application**

Construction Address: 173 HIGH STREET		
Total Square Footage of Proposed Structure: 4256		
Tax Assessor's Chart, Block & Lot		Applicant Name: PROTECTION PROFESSIONALS
Chart#	Block#	Lot#
037	E006	002
Cost of Work: \$ 9007.83		Address: 325 US ROUTE ONE, FALMOUTH MAINE 04105
		Phone: 207-775-5755
		Email: JEREMY@PROTECTIONPROFESSIONALS.NET
Lessee/Owner Name (if different):		Contractor Name (if different):
MMC REALTY CORP		B.H. MILLIKEN INC.
Address: 22 BRAMHALL STREET PORTLAND MAINE		Address: 235 PRESUMPCOT STREET C
Phone: 207-662-0111		Phone: 207-879-1877
Email:		Email: MS@BHMILLIKEN.COM
Current use (i.e. single family): OFFICE		
If vacant, what was the previous use? OFFICE		
Proposed specific use: OFFICE		
Is property part of a subdivision? If yes, name:		
Project description: REMODEL OF AN EXISTING FIRE ALARM SYSTEM		
Life Safety Code Occupancy Classification: EXISTING BUISINESS		
Is this new work or a renovation to an existing system? RENOVATION		
Is the top occupiable floor of the building greater than 75 feet above the lowest level of Fire Department access (high-rise)? NO		
Name of company providing programming and certification of system*: PROTECTION PROFESSIONALS		
Electrical permit #: ELEC2019-02124		
Will a master box be installed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, complete all items for approval):		
AES approved installing contractor: NA		
Documentation of AES approval: NA		
Property Owner: NA		
Property Owner Billing Address: NA		
Property common name: NA		
E-911 address for protected premises: NA		
Emergency contact phone: NA		Additional emergency contact phone: NA
Number of stories protected: NA		
Is the building protected by a supervised, automatic sprinkler system? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
Name of person to contact when the permit is ready: JEREMY@PROTECTIONPROFESSIONALS.NET		
Address: 325 US ROUTE ONE,		
City, State & Zip: FALMOUTH MAINE 04105		
Email Address: JEREMY@PROTECTIONPROFESSIONALS.NET		Phone: 207-775-5755

*For a list of approved fire alarm companies, see www.portlandmaine.gov/1486/Approved-Fire-Alarm-Companies389 Congress Street, Room 315/Portland Maine 04101/www.portlandmaine.gov/tel: 207-874-8703/fax: 207-874-8716



Sequence of Operations

	Audio/visual activation at FACP	Activate audible/visual signal at FACP & Annunciator	Device Description at FACP	Log event in system history	Silence of audible devices Including FACP & annunciator	Event acknowledgement	Reset of all system functions and all visual devices	Remote transmission to Central Station A=alarm; T=trouble; S=Supervisory; L = log only	Remote indicator
Manual Pull Station at FACP	X	X	X	X				A	
Smoke detector at FACP	X	X	X	X				A	
Sprinkler flow or pressure switches	X	X	X	X				A	
Sprinkler Tamper, low temp, or low air		X	X	X				S	
FACP/annunciator silence button		X	X	X	X			L	
FACP/annunciator acknowledge button		X	X	X		X			
FACP/annunciator reset button		X	X	X			X	L	
Removal of any device		X	X	X				T	
Ground fault		X	X	X				T	
System wiring "open"		X	X	X				T	
AC Power loss		X	X	X				T	
Secondary power loss		X	X	X				T	
Telephone line loss		X	X	X				T	
Voice evacuation panel	X	X	X	X	X	X		T	



Enter Project Name

Quantity	Part #	Description	Standby	Alarm	Total standby	Total alarm
1	MPC-7000	Fire Panel	0.0050	0.0050	0.0050	0.0050
1	RDC-2	Annunciator	0.0200	0.0850	0.0200	0.0850
	SRE-8	8 Relay Board	0.0000	0.1600	0.0000	0.0000
1	LEM-1	Loop expander	0.0180	0.0700	0.0180	0.0700
3	FDLC	Loop Card	0.0370	0.0370	0.1110	0.1110
1	NEM-1	Nac expander	0.0150	0.0025	0.0150	0.0025
1	MPC-DACT	Dialer	0.0380	0.0540	0.0380	0.0540
	CT-1K	City Tie Module	0.0050	0.0280	0.0000	0.0000
5	8700-Series	Pull Station	0.0018	0.0018	0.0090	0.0090
	8701	Mini Module	0.0018	0.0018	0.0000	0.0000
	8703	Dual Module	0.0018	0.0018	0.0000	0.0000
4	8704	Relay module	0.0018	0.0018	0.0072	0.0072
	8706	Addressable control Point	0.0018	0.0018	0.0000	0.0000
2	8709	Isolator module	0.0018	0.0018	0.0036	0.0036
79	8710	Smoke	0.0008	0.0008	0.0632	0.0632
	8713	Smoke FireSmart	0.0008	0.0008	0.0000	0.0000
18	8712	Heat	0.0008	0.0008	0.0144	0.0144
97	8853	Basic base	0.0000	0.0000	0.0000	0.0000
	8715	Audible base	0.0000	0.0240	0.0000	0.0000
	8743	Duct Detector	0.0018	0.0018	0.0000	0.0000
	8713	Duct smoke	0.0018	0.0018	0.0000	0.0000
	8704	Duct relay	0.0018	0.0018	0.0000	0.0000
	8730	Duct Remote	0.0018	0.0018	0.0000	0.0000
	2700-15	Strobe-15cd	0.0000	0.0630	0.0000	0.0000
	2700-30	Strobe-30cd	0.0000	0.0840	0.0000	0.0000
	2700-75	Strobe-75cd	0.0000	0.1430	0.0000	0.0000
	2700-110	Strobe-110cd	0.0000	0.1780	0.0000	0.0000
	6314-15	Horn/strobe	0.0000	0.0780	0.0000	0.0000
	6314-30	Horn/strobe	0.0000	0.0990	0.0000	0.0000
	6314-75	Horn/strobe	0.0000	0.1580	0.0000	0.0000
	6314-110	Horn/strobe	0.0000	0.1930	0.0000	0.0000
	2834-15	Horn/strobe	0.0000	0.0880	0.0000	0.0000
	2834-30	Horn/strobe	0.0000	0.1090	0.0000	0.0000
	2834-75	Horn/strobe	0.0000	0.1680	0.0000	0.0000
	2834-110	Horn/strobe	0.0000	0.2130	0.0000	0.0000
	6310	Minihorns	0.0000	0.0150	0.0000	0.0000
		Miscellaneous			0.0000	0.0000
		Miscellaneous			0.0000	0.0000
		Miscellaneous			0.0000	0.0000
		Miscellaneous			0.0000	0.0000
		Miscellaneous			0.0000	0.0000
		Miscellaneous			0.0000	0.0000
		Miscellaneous			0.0000	0.0000
TOTAL			0.1584	2.0749	0.3044	0.4249

	Hours	Standby current			Total
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Enter Project Name



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	24	0.3044			7.3056
Minutes		Alarm current			
5	0.08333333	0.4249			0.0354
		Battery Capacity			
	20%	7.3410			8.8092



NAC Current Draw

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STAND ALONE STROBES - PLASTIC					
QTY	MODEL #	DESCRIPTION	PART #	ALM	T ALM
	15073	REMOTE SIGNAL POWER EXPANDER 6.0 AMPS	15073	0.050	0.000
	5406B-14	Strobe Synchronization Module, Red	5406B-14	0.055	0.000
7	2700B*24	ADAPTER STROBE 15/75 CD	2700B	0.063	0.441
	2700B*24	ADAPTER STROBE 30/75 CD	2700B	0.084	0.000
	2700B*24	ADAPTER STROBE 75 CD	2700B	0.143	0.000
	2700B*24	ADAPTER STROBE 110 CD	2700B	0.178	0.000
	8715	Smoke Sounder bases		0.024	0.000
ELECTRO-MECHANICAL					
HORNS & HORN/STROBES - PLASTIC					
	6230B	DC HORN W/ PLASTIC GRILL	6230B	0.038	0.000
	6234B	DC HORN W/ 15/75 CD ADAPTER STROBE	6234B	0.091	0.000
	6234B	DC HORN W/ 30/75 CD ADAPTER STROBE	6234B	0.122	0.000
	6234B	DC HORN W/ 75 CD ADAPTER STROBE	6234B	0.181	0.000
	6234B	DC HORN W/ 110 CD ADAPTER STROBE	6234B	0.216	0.000
ELECT. MINI-HORNS & HORN/STROBES					
STEADY TONE, PLASTIC					
	6300B	Mini Horn Single Gang - Steady Tone	6300B	0.015	0.000
	6301B	Mini Horn Double Gang - Steady Tone	6301B	0.015	0.000
	6304B	MINI HORN W/ 15/75 CD ADAPTER STROBE	6304B	0.078	0.000
	6304B	MINI HORN W/ 30/75 CD ADAPTER STROBE	6304B	0.099	0.000
	6304B	MINI HORN W/ 75 CD ADAPTER STROBE	6304B	0.158	0.000
	6304B	MINI HORN W/ 110 CD ADAPTER STROBE	6304B	0.193	0.000
ELECT. MINI-HORNS & HORN/STROBES					
STEADY or TEMPORAL TONE, PLASTIC					
	6310B	Mini Horn Single Gang	6310B	0.015	0.000
	6311B	Mini Horn Double Gang	6311B	0.015	0.000
	6314B	MINI HORN W/ 15/75 CD ADAPTER STROBE	6314B	0.078	0.000
	6314B	MINI HORN W/ 30/75 CD ADAPTER STROBE	6314B	0.099	0.000
	6314B	MINI HORN W/ 75 CD ADAPTER STROBE	6314B	0.158	0.000
	6314B	MINI HORN W/ 110 CD ADAPTER STROBE	6314B	0.193	0.000
MULTI-TONE HORNS &					
HORN/STROBES - PLASTIC					



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QTY	PART #	DESCRIPTION	PART #	ALM	T ALM
	2880B	Multi Tone Horn Single Gang	2880B*	0.040	0.000
	2881B	Multi Tone Horn Double Gang	2881B*	0.040	0.000
	2884B	Multi Tone w/ 15/75 CD ADAPTER STROBE	2884B*	0.086	0.000
	2884B	Multi Tone w/ 30/75 CD ADAPTER STROBE	2884B*	0.107	0.000
	2884B	Multi Tone w/ 75 CD ADAPTER STROBE	2884B*	0.166	0.000
	2884B	Multi Tone w/ 110 CD ADAPTER STROBE	2884B*	0.201	0.000
		*HORN CURRENT USED IS 23ma			
		SYNCHRONOUS HORN & HORN/STROBES			
	2830B	SYNC/NON-SYNC HORN , SINGLE GANG	2830B	0.025	0.000
	2831B	SYNC/NON-SYNC HORN , UNIV. MOUNT	2831B	0.025	0.000
10	2834B	SYNC/NON-SYNC HORN 15/75 ADAPTER STROBE	2834B	0.088	0.880
	2834B	SYNC/NON-SYNC HORN 30/75 ADAPTER STROBE	2834B	0.109	0.000
	2834B	SYNC/NON-SYNC HORN 75 ADAPTER STROBE	2834B	0.168	0.000
	2834B	SYNC/NON-SYNC HORN 110 ADAPTER STROBE	2834B	0.213	0.000
		CLEAR-SPEAK SPEAKERS & SPEAKER/STROBES			
	2953B	CLEAR SPEAK PLASTIC GRILL	2953B	0	0.000
	2954B	SPEAKER W/ 15/75 CD ADAPTER STROBE	2954B	0.063	0.000
	2954B	SPEAKER W/ 30/75 CD ADAPTER STROBE	2954B	0.084	0.000
	2954B	SPEAKER W/ 75 CD ADAPTER STROBE	2954B	0.143	0.000
	2954B	SPEAKER W/ 110 CD ADAPTER STROBE	2954B	0.178	0.000
	2951B	SPEAKER FLUSH MOUNT	2951B		
	2955B-0-2	CEILING MOUNT SPEAKER	2955B-0-21		
	2958B-21	CEILING MNT. SPKR. W/ 15/75 CD ADPTR STROBE	2958B-21	0.063	0.000
	2958B-21	CEILING MNT. SPKR. W/ 30/75 CD ADPTR STROBE	2958B-21	0.084	0.000
	2958B-21	CEILING MNT. SPKR. W/ 75 CD ADPTR STROBE	2958B-21	0.143	0.000
	2958B-21	CEILING MNT. SPKR. W/ 110 CD ADPTR STROBE	2958B-21	0.178	0.000
		CLEAR-SPEAK PLUS SPEAKERS & SPEAKER/STROBES			
	2941B	SPEAKER FLUSH MOUNT	2941B		
	2943B	SPEAKER SEMI-FLUSH MOUNT	2943B		
	2944B	SPEAKER W/ 15/75 CD ADAPTER STROBE	2944B	0.063	0.000
	2944B	SPEAKER W/ 30/75 CD ADAPTER STROBE	2944B	0.084	0.000
	2944B	SPEAKER W/ 75 CD ADAPTER STROBE	2944B	0.143	0.000



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	2944B	SPEAKER W/ 110 CD ADAPTER STROBE	2944B	0.178	0.000
	2945B-21	CEILING MOUNT SPEAKER	2945B-21		0.000
	2948B-21	CEILING MNT. SPKR. W/ 15/75 CD ADPTR STROBE	2948B-21	0.063	0.000
	2948B-21	CEILING MNT. SPKR. W/ 30/75 CD ADPTR STROBE	2948B-21	0.084	0.000
	2948B-21	CEILING MNT. SPKR. W/ 75 CD ADPTR STROBE	2948B-21	0.143	0.000
	2948B-21	CEILING MNT. SPKR. W/ 110 CD ADPTR STROBE	2948B-21	0.178	0.000
		WEATHERPROOF STROBES AND HORN STROBES			
	2705B-L	100 CD STROBE	2705B-E	0.059	0.000
	2705B-Z	100 CD SYNC STROBE	2705B-M	0.059	0.000
	6235B-L	100 CD HORN STROBE	2705B-L	0.249	0.000
	6235B-Z	100 CD SYNC STROBE W/ HORN	2705B-Z	0.249	0.000
			6230B	0.038	0.000
			6235B-E	0.097	0.000
			6235B-M	0.097	0.000
			6235B-L	0.287	0.000
			6235B-Z	0.287	0.000
		Total			1.321



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STAND ALONE STROBES - PLASTIC					
QTY	MODEL #	DESCRIPTION	PART #	ALM	T ALM
	15073	REMOTE SIGNAL POWER EXPANDER 6.0 AMPS	15073	0.050	0.000
	5406B-14	Strobe Synchronization Module, Red	5406B-14	0.055	0.000
7	2700B*24	ADAPTER STROBE 15/75 CD	2700B	0.063	0.441
	2700B*24	ADAPTER STROBE 30/75 CD	2700B	0.084	0.000
	2700B*24	ADAPTER STROBE 75 CD	2700B	0.143	0.000
	2700B*24	ADAPTER STROBE 110 CD	2700B	0.178	0.000
	8715	Smoke Sounder bases		0.024	0.000
ELECTRO-MECHANICAL					
HORNS & HORN/STROBES - PLASTIC					
	6230B	DC HORN W/ PLASTIC GRILL	6230B	0.038	0.000
	6234B	DC HORN W/ 15/75 CD ADAPTER STROBE	6234B	0.091	0.000
	6234B	DC HORN W/ 30/75 CD ADAPTER STROBE	6234B	0.122	0.000
	6234B	DC HORN W/ 75 CD ADAPTER STROBE	6234B	0.181	0.000
	6234B	DC HORN W/ 110 CD ADAPTER STROBE	6234B	0.216	0.000
ELECT. MINI-HORNS & HORN/STROBES					
STEADY TONE, PLASTIC					
	6300B	Mini Horn Single Gang - Steady Tone	6300B	0.015	0.000
	6301B	Mini Horn Double Gang - Steady Tone	6301B	0.015	0.000
	6304B	MINI HORN W/ 15/75 CD ADAPTER STROBE	6304B	0.078	0.000
	6304B	MINI HORN W/ 30/75 CD ADAPTER STROBE	6304B	0.099	0.000
	6304B	MINI HORN W/ 75 CD ADAPTER STROBE	6304B	0.158	0.000
	6304B	MINI HORN W/ 110 CD ADAPTER STROBE	6304B	0.193	0.000
ELECT. MINI-HORNS & HORN/STROBES					
STEADY or TEMPORAL TONE, PLASTIC					
	6310B	Mini Horn Single Gang	6310B	0.015	0.000
	6311B	Mini Horn Double Gang	6311B	0.015	0.000
	6314B	MINI HORN W/ 15/75 CD ADAPTER STROBE	6314B	0.078	0.000
	6314B	MINI HORN W/ 30/75 CD ADAPTER STROBE	6314B	0.099	0.000
	6314B	MINI HORN W/ 75 CD ADAPTER STROBE	6314B	0.158	0.000
	6314B	MINI HORN W/ 110 CD ADAPTER STROBE	6314B	0.193	0.000
MULTI-TONE HORNS &					
HORN/STROBES - PLASTIC					



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QTY	PART #	DESCRIPTION	PART #	ALM	T ALM
	2880B	Multi Tone Horn Single Gang	2880B*	0.040	0.000
	2881B	Multi Tone Horn Double Gang	2881B*	0.040	0.000
	2884B	Multi Tone w/ 15/75 CD ADAPTER STROBE	2884B*	0.086	0.000
	2884B	Multi Tone w/ 30/75 CD ADAPTER STROBE	2884B*	0.107	0.000
	2884B	Multi Tone w/ 75 CD ADAPTER STROBE	2884B*	0.166	0.000
	2884B	Multi Tone w/ 110 CD ADAPTER STROBE	2884B*	0.201	0.000
		*HORN CURRENT USED IS 23ma			
		SYNCHRONOUS HORN & HORN/STROBES			
	2830B	SYNC/NON-SYNC HORN , SINGLE GANG	2830B	0.025	0.000
	2831B	SYNC/NON-SYNC HORN , UNIV. MOUNT	2831B	0.025	0.000
7	2834B	SYNC/NON-SYNC HORN 15/75 ADAPTER STROBE	2834B	0.088	0.616
	2834B	SYNC/NON-SYNC HORN 30/75 ADAPTER STROBE	2834B	0.109	0.000
	2834B	SYNC/NON-SYNC HORN 75 ADAPTER STROBE	2834B	0.168	0.000
	2834B	SYNC/NON-SYNC HORN 110 ADAPTER STROBE	2834B	0.213	0.000
		CLEAR-SPEAK SPEAKERS & SPEAKER/STROBES			
	2953B	CLEAR SPEAK PLASTIC GRILL	2953B	0	0.000
	2954B	SPEAKER W/ 15/75 CD ADAPTER STROBE	2954B	0.063	0.000
	2954B	SPEAKER W/ 30/75 CD ADAPTER STROBE	2954B	0.084	0.000
	2954B	SPEAKER W/ 75 CD ADAPTER STROBE	2954B	0.143	0.000
	2954B	SPEAKER W/ 110 CD ADAPTER STROBE	2954B	0.178	0.000
	2951B	SPEAKER FLUSH MOUNT	2951B		
	2955B-0-2	CEILING MOUNT SPEAKER	2955B-0-21		
	2958B-21	CEILING MNT. SPKR. W/ 15/75 CD ADPTR STROBE	2958B-21	0.063	0.000
	2958B-21	CEILING MNT. SPKR. W/ 30/75 CD ADPTR STROBE	2958B-21	0.084	0.000
	2958B-21	CEILING MNT. SPKR. W/ 75 CD ADPTR STROBE	2958B-21	0.143	0.000
	2958B-21	CEILING MNT. SPKR. W/ 110 CD ADPTR STROBE	2958B-21	0.178	0.000
		CLEAR-SPEAK PLUS SPEAKERS & SPEAKER/STROBES			
	2941B	SPEAKER FLUSH MOUNT	2941B		
	2943B	SPEAKER SEMI-FLUSH MOUNT	2943B		
	2944B	SPEAKER W/ 15/75 CD ADAPTER STROBE	2944B	0.063	0.000
	2944B	SPEAKER W/ 30/75 CD ADAPTER STROBE	2944B	0.084	0.000
	2944B	SPEAKER W/ 75 CD ADAPTER STROBE	2944B	0.143	0.000




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	2944B	SPEAKER W/ 110 CD ADAPTER STROBE	2944B	0.178	0.000
	2945B-21	CEILING MOUNT SPEAKER	2945B-21		0.000
	2948B-21	CEILING MNT. SPKR. W/ 15/75 CD ADPTR STROBE	2948B-21	0.063	0.000
	2948B-21	CEILING MNT. SPKR. W/ 30/75 CD ADPTR STROBE	2948B-21	0.084	0.000
	2948B-21	CEILING MNT. SPKR. W/ 75 CD ADPTR STROBE	2948B-21	0.143	0.000
	2948B-21	CEILING MNT. SPKR. W/ 110 CD ADPTR STROBE	2948B-21	0.178	0.000
		WEATHERPROOF STROBES AND HORN STROBES			
	2705B-L	100 CD STROBE	2705B-E	0.059	0.000
	2705B-Z	100 CD SYNC STROBE	2705B-M	0.059	0.000
	6235B-L	100 CD HORN STROBE	2705B-L	0.249	0.000
	6235B-Z	100 CD SYNC STROBE W/ HORN	2705B-Z	0.249	0.000
			6230B	0.038	0.000
			6235B-E	0.097	0.000
			6235B-M	0.097	0.000
			6235B-L	0.287	0.000
			6235B-Z	0.287	0.000
		Total			1.057



8700-S AND 8700-D SERIES INTELLIGENT MANUAL FIRE ALARM BOXES FOR MPC-6000 AND MPC-7000 CONTROL PANELS

Features

- Durable Design
- Shock and Vibration Resistant
- Pull Down Lever Remains Down Until Reset
- Custom Microcomputer Chip Technology
- Dynamic Supervision
- Polarity Insensitive with SureWire™ Technology
- Reset with Allen Key
- No Break Rods Necessary
- Two Wire Operation
- Surface or Semiflush Installation
- Electronic Address Programming is Easier and More Dependable
- Single and Double Action Models Available
-  Listed, CFSM and NYMEA Approved



8700-S
Single-Action Station



8700-D
Double-Action Station

Introduction

8700-S and 8700-D intelligent manual fire alarm boxes provide the markets' most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each 8700 manual fire alarm box incorporates custom microcomputer chip. The microcomputer chip technology, and its sophisticated bi-directional communication capabilities with the control panel, achieves the state of an "Intelligent Initiating Device."

Description

The 8700-S and 8700-D are constructed of durable molded polycarbonate material which is matte finished in red with raised white lettering. The housing accommodates a "pull-down" lever which, when operated, locks in position indicating the manual fire alarm box has been activated. The pull down lever remains down and locked until the manual fire alarm box is reset. The manual fire alarm box is reset only by opening the hinged housing cover with an allen key and then closing and locking the cover.

The 8700-S and 8700-D manual fire alarm boxes operate with MPC-6000 & 7000 control panels.

The manual fire alarm box's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.

Faraday's innovative technology also allows all 8700 Series Intelligent manual fire alarm boxes to be programmed by using the Model 8720 Programmer/Tester. The Programmer/Tester is a compact, portable, menu driven accessory which makes programming and testing a manual fire alarm box device faster, easier and more dependable than previous methods. The 8720 eliminates the need for the device's mechanical addressing mechanisms, such as program jumpers, dipswitches or rotary dials because the 8720 electronically sets the manual fire alarm box's address into its microcomputer chip, nonvolatile memory. Vibration, corrosion and other conditions which deteriorate mechanical addressing mechanisms are no longer a cause for concern.

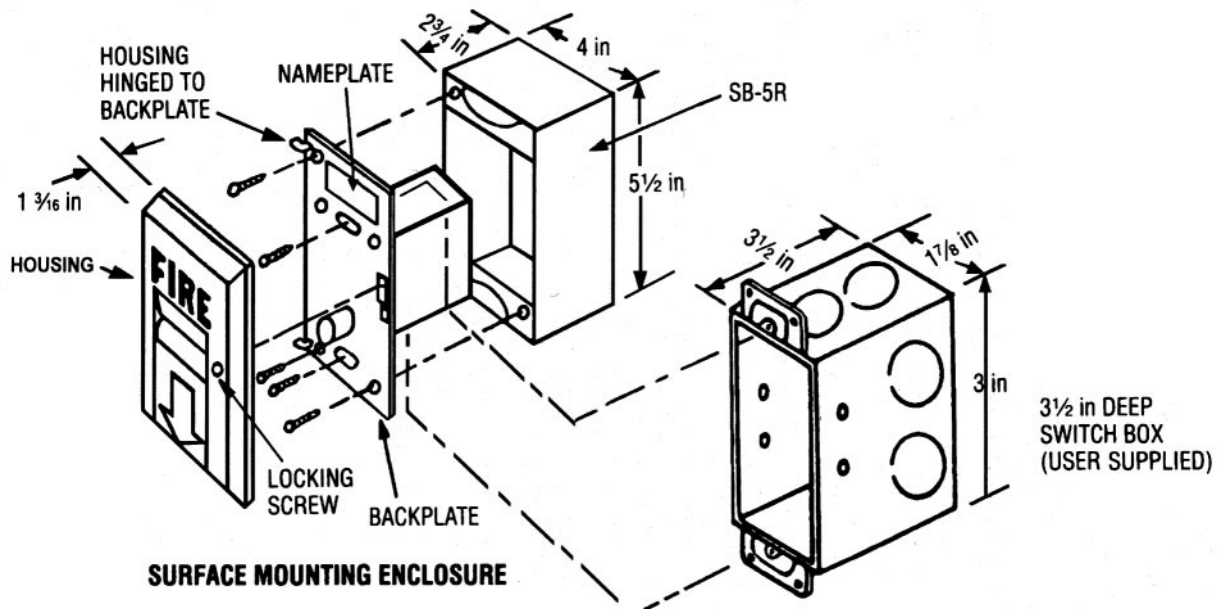
The 8700-S and 8700-D are fitted with screw terminals for connection to an addressable circuit. They can be either surface or semiflush mounted.

The 8700 Series manual fire alarm boxes derive their power, communicate information and receive commands over a single pair of wires.

The 8700 Series is compatible on the same circuit with all 8700 detectors, interfaces or addressable conventional zone modules.



Mounting Data



Electrical Ratings

Current Draw (Active or Standby): 1mA

Ordering Information

Model	Description	Shipping Lbs.	Weight kg.	Part No.
8700-S	Addressable Manual Fire Alarm Box Single Action	2.0	.90	500-033200FA
8700-D	Addressable Manual Fire Alarm Box, Double Action	2.5	1.13	500-033400FA
SB-SR	Surface Mounting Box	1.5	.68	310-019860FA
LTP	Reset Tool Package (Contains 2 tools)	.5	.23	500-620490FA



Siemens Building Technologies, Inc.
 8 Fernwood Road • Florham Park, NJ 07932
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8701 Intelligent Monitoring Module

Features

Intelligent Interface Modules for use with MPC-6000 & 7000 Control Panels

- Interfaces and Supervises Normally Open Contacts
- Compact Size Allows Mounting in Single Gang Box Behind Equipment
- Polarity Insensitive Technology
- Innovative Technology Supports Comprehensive System and Interface Communication
- Dynamic Supervision
- Two Wire Operation
- 8720 Device Program/Test Unit Electronically Programs and Verifies Device's Address and Tests Device's Functionality
-  Listed, CSFM and NYMEA Approved

Introduction

The FARADAY 8701 Intelligent interface module is designed to provide the means of interfacing direct shorting devices to the MPC-6000 & 7000 initiating circuit.

The 8701 Intelligent interface module provides the market's most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each 8701 interface module incorporates microcomputer chip technology and its sophisticated bi-directional communication capabilities with the control panel.

Description

The 8701 is designed to monitor a normally open dry contact and reports the contact's status to the control panel.

The device's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.

FARADAY innovative technology allows all 8701 intelligent interface modules to be programmed by



using the 8720 Device Program/Test Unit. The 8720 is a compact, portable, menu driven accessory that makes programming and testing an interface device faster, easier and more dependable than previous methods. The 8720 eliminates the need for mechanical addressing mechanisms, such as program jumpers, DIP switches or rotary dials, because it electronically sets the 8701 interface's address into the interface's microcomputer chip non-volatile memory. Vibration, corrosion and other conditions that deteriorate mechanical addressing mechanisms are no longer a cause for concern. This 8701 is connected to the program/tester with the programming cable provided with the tester. This programming cable utilizes two (2) alligator clip connectors to attach to the 8701.

The 8701 Series has five leads, one for grounding, which are wired to the system with user supplied wire nuts.



The 8701 is fully compatible on the same circuit with detectors, addressable manual stations or any addressable intelligent modules.

All 8701 intelligent interface modules have been UL and ULC Listed.

Environmental operating conditions for all 8701 modules are 32°F (°C) to 120°F (49°C) with a relative humidity of not greater than 93% non-condensating.

Ordering Information

Model	Description	Shipping oz.	Weight kg.	Part No.
8701	Single Input	3.5	.1	500-034000FA

Electrical Ratings

Current Draw (Active or Standby): 1mA




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Monitoring Modules for MPC-6000 & 7000 Control Panels

Features

Intelligent Interface Modules for 8702, 8703 and 8704

- Interfaces and Supervises Normally Open Contacts
- Integral SPDT Relay (up to 4 amps) on 8704 Model
- Dual Input on 8703 Model using a single address
- Polarity Insensitive Technology
- Multi-color L.E.D. indicates status (green, amber, red)
- Easy front access to programming port and wiring terminals
- Mounts 4 inch square 2 ¼ deep box, or double gang box
- Dynamic Supervision
- Comes with 5x5 inch faceplate
- Two wire operation
- 8720 Device Program/Test Unit programs and Verifies Device's Address and Tests Devices functionality
- Electronic Address Programming is Easy and Dependable
-  Listed, CFMSM, NYMEA Approved



Introduction

The 8702, 8703 and 8704 Intelligent interface modules are designed to provide the means of interfacing direct shorting devices to the MPC-6000 & 7000 Control Panels.

The X1 Series Intelligent interface modules provide the market's most advanced method of address programming and supervision, combined with sophisticated control panel communication. Each X1 Series interface module incorporates a microcomputer chip. The X1 Series microcomputer chip technology and its sophisticated bi-directional communication capabilities with the control panel, achieve the state of an "Intelligence Device."

Description

The X1 Series intelligent interface modules are available in three models. The 8702 and 8704 are designed to monitor a normally open dry contact. The interface module reports the contact's status to the control panel. The 8702 model can only monitor and report the status of the contact, while the 8704 incorporates an addressable Form C relay. The

8704 relay and contact device input are controlled at the same address. For the control panel system, the relay and input contact can be controlled as a separate function. The relay is typically used where control or shunting of external equipment is required.

The 8703 is a dual input module and is designed to supervise and monitor two sets of dry contacts. The Dual Input Module only requires one address but responds independently to each input. The 8703 is ideal for monitoring a water flow switch and its respective valve tamper switch.

The module has a multi-color Light Emitting Diode that flashes green when operating normally, amber if unit is in trouble condition, and red to indicate a change of state. The 8704 red L.E.D. indicates a change of state in the relay.

The device's microcomputer chip has the capacity of storing, in memory, identification information as well as important operating status information.



FARADAY innovative technology allows all X1 Series intelligent interface modules to be programmed by using the 8720 Device Programming/ Test Unit. The 8720 is a compact, portable, menu driven accessory that makes programming and testing an interface device faster, easier and more dependable than previous methods. The 8720 eliminates the need for mechanical addressing mechanisms, such as program jumpers, DIP switches or rotary dials, because the 8720 electronically sets the address into the interface's micro-computer chip nonvolatile memory. Vibration, corrosion and other conditions that deteriorate mechanical addressing mechanisms are no longer a cause for concern.

The X1 Series modules are fitted with screw terminals for connection to an addressable circuit.

The X1 Series modules are fully compatible on the same circuit with intelligent detectors, addressable manual stations or other addressable intelligent modules.

All X1 Series intelligent interface modules are UL listed.

Environmental operating conditions for all 8700 Series modules are 32°F (°C) to 120°F (49°C) with a relative humidity of not greater than 93% non-condensating.

Mounting Data

Addressable Interface Model 8702, 8703, 8704 mounts directly into a 4 inch square 2 ¼ deep box or a double gang box (user supplied). A 5 inch square off-white faceplate is included with each module.

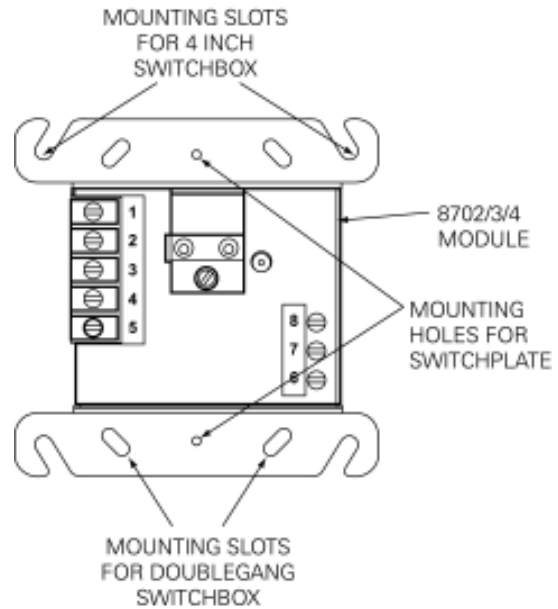


Figure A
Mounting the 8702/3/4

Electrical Ratings

Current Draw (Active or Standby):
1mA

8704 Relay Ratings

Resistive:
4A, 125 VAC
4A, 30 VDC

Inductive:
3.5A, 120 VAC (0.6P.F.)
3.0A, 30 VDC (0.6P.F.)
2.0A, 120 VAC (0.4P.F.)
2.0A, 120 VAC (0.35P.F.)
2.0A, 30 VDC (0.35P.F.)

Ordering Information

Model	Description	Shipping Weight		Part No.
		Lb.	Kg.	
8702	Single Input	7 oz.	2	500-033370FA
8703	Dual Input	7 oz.	2	500-033360FA
8704	Single Input w/Relay	7 oz.	2	500-033300FA




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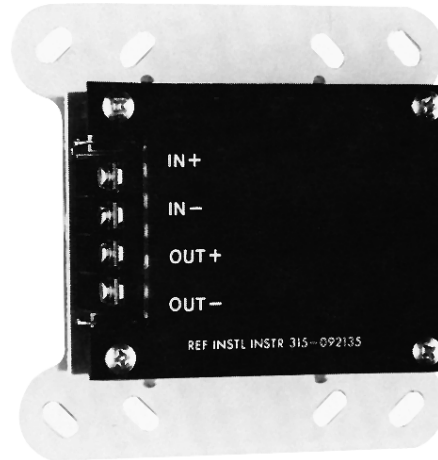
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8709 Line Isolator Module for Use With MPC-6000 & 7000 Control Panels

Features

- Short Circuit Isolation
- Used on MPC-6000 & 7000 Intelligent Device Circuits
- Increased Fault Tolerance
- Style 4 or Style 6
- Up to 12 Per Loop
- Requires no Programming
- Does Not Occupy a Device Address
- Mounts in Either 4" Square, 2 1/8" Deep or a 3 1/2" Deep Double Gang Electrical Box
- Local LED Indicator
- Cover Plate Included
-  Listed, NYMEA and CSFM Submitted



Description

The 8709 loop isolator module provides short circuit protection on MPC-6000 & 7000 intelligent device circuits (FDLC). When a short is detected by the 8709, it isolates the affected segment of the circuit, allowing the remaining devices to continue operation. The 8709 is self-restoring, automatically reconnecting to circuit segment when the fault is removed.

The 8709 also includes a yellow LED which illuminates to indicate that the device has been activated. The 8709 mounts in either a 4" square, 2 1/8" deep or a 3 1/2" deep double gang electrical box and is supplied with a cover plate with an opening for the LED.

It can be wired in either a Style 4 or Style 6 configuration.

The 8709 does not occupy a device address on the intelligent device circuit and requires no programming. Up to twelve 8709s may be installed on each loop.

Ordering Information

Model	Description	Part No.
8709	Line Isolator Module	500-033170FA




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Models 8710, 8712, 8713 (FireSmart™) X1 Series Detectors

Features

Intelligent Detectors for use with MPC 6000 and 7000 Control Panels

- Three models available Photo (8710), Photo-Thermal (8713) and 135°F Thermal, fixed and rate of rise (8712)
- High-Speed, Fault-Tolerant Communication
- Multi-color status L.E.D (green, amber, red)
- Field cleanable photo chamber
- Electronic addressing with field programmer model 8720
- Mounts in standard 8853 Series Base
- Low Profile Design
- Optional fully programmable relay base, audible base and duct housing
- Two Wire Operation
-  UL Listed, CSFM, NYMEA and FM Approved

Introduction

The 8710 and 8713 intelligent photoelectric smoke detectors provide reliable smoke detection to meet today's critical life safety and property protection needs. The FireSmart series of detectors provide an extremely high degree of resistance to RFI, EMI and humidity. The FireSmart series detector utilizes a microprocessor with "on-board" EEPROM supporting the detectors sophisticated programming, error checking and self-diagnostic capabilities.

The 8710 is an intelligent smoke detector, the 8713 is a smoke detector with thermal assist, and the 8712 is a heat detector. The thermal sensors respond at 135°F. These devices are designed for use with the MPC-6000 and 7000 control panels and use the 8853 detector base.

Description

The 8710, 8712 and 8713 are two-wire, plug-in detectors that are compatible with the MPC-6000 and 7000 control panels. Each 8710 and 8713 have a dust resistant, field cleanable photo chamber and microprocessor based electronics. The 8712 and 8713 utilize a state-of-the-art thermistor for heat sensing. All detectors have low profile, high-temperature plastic covers for maximum protection of components and use surface mount electronic components for increased reliability. Every smoke detector is shipped with a red protective dust cover.



Smoke detectors utilize an infrared light emitting diode (IRLED) and a light sensing photodiode. Under normal conditions, light transmitted by the LED is directed away from the photodiode and scattered through the smoke chamber in a controlled pattern. The smoke chamber is designed to manage light dissipation and extraneous reflections from dust particles or other non-smoke airborne contaminants in such a way as to maintain stable, consistent detector operation. When smoke enters the chamber, light emitted from the IRLED is scattered by the smoke particles and is received by the photodiode.

When an alarm condition occurs, the detector "latches" in alarm and informed the control panel of its status. The detector is reset upon command from the control panel. The control panel also sets the detector's sensitivity.

Every time the control panel polls the detector, the multi-color LED will flash green to indicate that it has passed the internal self test and has communicated its status to the control panel. If the detector does not pass the self test, is dirty beyond the limits of its environmental compensation, or is in "trouble" in any way, the LED flashes amber and informs the panel of its status, allowing for easy identification of which detector is in trouble. When in alarm, the detector LED flashes red.



Detectors are assigned their address using the 8720 Field Programmer/Tester, which electronically stores address information in the detectors non-volatile memory. The 8720 can also be used for device testing and diagnostics.

The FireSmart series detectors can be on the same circuit as other 8700 series initiating devices such as manual stations, TRI Monitoring/Relay Modules, etc. Detectors are mounted in the standard 8853 or 8716 Relay Base, 8715 Audible Base, or 8840/8717 Duct Housing. Use the standard 8727C or 8727W (red) Remote Lamps when remote annunciation is required.

Smoke detectors are field cleanable per the instructions included on the installation sheet provided with the product. X1 series detectors are UL listed for operation within the standard UL specified temperature range of 32 to 100 degrees F (0 to 38 degrees C).

Application Data

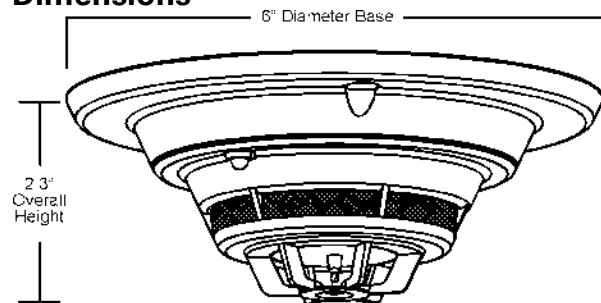
Installation of X1 series detectors require detector bases 8853, 8715, 8716, or 8840.

The 8710 and 8713 detectors can be applied within a maximum 30-foot center spacing (900 square foot area) as referenced in NFPA 72. This applications guideline is based on ideal conditions; specifically, smooth ceiling surfaces, minimal air movement and no physical obstructions between potential fire sources and the detector. Do not mount detectors in close proximity to ventilation or heating and air conditioning outlets. Exposed joints or beamed

ceilings may also affect safe spacing limitations of detectors. Should any questions arise regarding detector placement, observe NFPA 72 guidelines. Locating in close proximity to "noisy" electronic light ballasts or other sources of high level EMI or RFI should be avoided.

Good fire protection system engineering and common sense dictate how and when fire detection devices are installed and used. Contact your local Faraday authorized sales outlet whenever you need assistance applying these devices. Be sure to follow NFPA guidelines, the UL approved installation instructions provided with the product and local codes, as with any other fire protection equipment.

Dimensions



Technical Specifications

Operating Temperature

+32°F (0°C) to 100°F (38°C) per UL 269/268A

Humidity

0-93% Relative Humidity Non-Condensing

Current Draw

1 mA in alarm or stand-by mode

Ordering Information

Model	Description	Part No.
8710	Photoelectric Detector	500-034800FA
8713	Photo-Thermal Detector (FireSmart™)	500-033290FA
8712	135°F Fixed Thermal Detector	500-033380FA
8715	Audible Base	500-033210FA
8853	Detector Base	500-094151FA
8840	Air Duct Housing	500-095656FA
8717	Air Duct Housing with Relay	500-033280FA
8716	Relay Base	500-033220FA
8727W	Remote Lamp (red) for 4" octagon box	500-033310FA
8727C	Remote Lamp (red) for single gang box	500-033230FA
8720	Field Programmer	500-033260FA
8846	Detector base lock (Pkg. of 50)	500-695350FA



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INSTALLATION INSTRUCTIONS MULTI-HIGH-CANDELA FOUR WIRE APPLIANCES (WALL MOUNT VERSIONS)

IMPORTANT – All audible and visual signaling appliances must be installed in accordance with all applicable national and local fire alarm codes and any other required regulatory agencies.

Series HS-HMC Multi-Candela Horn Strobe provides two selectable candela settings (135, 185). The HS-HMC allows for independent operation of the strobe circuit and the horn circuit. It is the ideal choice for retrofit applications as well as new installations. The HS-HMC appliance is UL Listed under Standard 1971 for Signaling Appliances for the Hearing Impaired and UL Standard 464 for Audible Signal Appliances. It is listed for **indoor use only** and can be mounted to double-gang, 4" backbox, 100mm European backbox or SHBBS surface backbox (See wiring and mounting information). This appliance is listed for **wall mounting only**. The HS-HMC appliance uses a xenon flashtube with solid state circuitry enclosed in a polycarbonate lens to provide maximum visibility and reliability for effective visible signaling.

Siemens Series HS appliances provide a selectable continuous or Code 3 horn tone and non-synchronized strobe when connected directly to a Fire Alarm Control Panel (FACP). They can also provide a synchronized Code 3 (or March Time) horn tone and synchronized strobe when connected to a notification appliance circuit running the

Siemens sync protocol. HS appliance can be field set for High (HI), medium (MED) dBA or low (LO) dBA sound output.

NOTE: The Code 3 temporal pattern (1/2 second on, 1/2 second off, 1/2 second on, 1/2 second off, 1-1/2 off and repeat) is specified by ANSI and NFPA 72 for standard emergency evacuation signaling. **The Code 3 Horn should be used only for fire evacuation signaling and not for any other purpose.**

The HS-HMC is designed for use with either filtered DC or unfiltered full-wave-rectified (FWR) input voltage. All inputs are polarized for compatibility with standard reverse polarity supervision of circuit wiring by an FACP.

NFPA 72/ANSI 117.1 conform to ADAAG Equivalent Facilitation Guidelines in using fewer, higher intensity strobes within the same protected area.

NOTE: Refer to P/N 315-096363 for the maximum number of appliances on a single notification appliance circuit.

SPECIFICATIONS:

Table 1: UL Listed Models and Ratings		
Model*	Operating Voltage (Special Application) Per UL 1971 (VDC/VRMS)	Strobe Candela (cd)
HS-HMC	16.0-33.0	135/185

*Available in red and white.

Table 2: dBA Sound Output for 24VDC Models				
Description	Volume	Reverberant Per UL 464		
		16.0VDC	24VDC	33.0VDC
Continuous Horn	Low	80	83	86
	Medium	85	88	91
	High	88	91	93
Code 3 Horn or March Time**	Low	75	79	82
	Medium	80	84	86
	High	84	87	89

**Available in sync mode only.

NOTES:

1. The strobe will produce 1 flash per second over the Input Voltage range.
2. This horn/strobe model meets the required light distribution patterns defined in UL1971.
3. This model is UL Listed for indoor use with a temperature range of +32°F to +120°F (0°C to +49°C) and maximum humidity of 93% ± 2% RH. The effect of shipping and storage temperatures shall not adversely affect the performance of the appliance when it is stored in the original cartons and not subjected to misuse or abuse.

CANDELA SETTING WILL DETERMINE THE CURRENT DRAW OF THE PRODUCT.

Table 3: Current Ratings (Horn Only)				
Maximum RMS Current (Amps)				
	Voltage	Lo	Med	Hi
DC	16-33VDC	0.027	0.068	0.110
FWR	16-33VRMS	0.041	0.050	0.094

Table 3A: Current Ratings (Strobe Only)			
Maximum RMS Current (Amps)			
	Voltage	135cd	185cd
DC	16-33VDC	0.318	0.445
FWR	16-33VRMS	0.482	0.684

When calculating the total current: Use Tables 3 & 3A to determine the highest value of "RMS Current" for an individual HS-HMC then multiply the value by the total number of HS Appliances. Be sure to add the currents for any other appliances powered by the same source and to include any required safety factors.

Note: These notification appliances are UL Listed as "Special Application". They are intended to be used only with Siemens notification appliance circuits.

Note: Refer to the installation instructions for the appropriate NAC to find the maximum allowed voltage drop. Use this value along with the current draw for the appliance to determine the allowable wire resistance. The maximum wire resistance between strobes shall not exceed 35 ohms.

MAKE SURE THAT THE TOTAL RMS CURRENT REQUIRED BY ALL APPLIANCES THAT ARE CONNECTED TO THE SYSTEM'S PRIMARY AND SECONDARY POWER SOURCES DO NOT EXCEED THE POWER SOURCES' RATED CAPACITY OR THE CURRENT RATINGS OF ANY FUSES ON THE CIRCUITS TO WHICH THESE APPLIANCES ARE WIRED. OVERLOADING POWER SOURCES OR EXCEEDING FUSE RATINGS COULD RESULT IN LOSS OF POWER AND FAILURE TO ALERT OCCUPANTS DURING AN EMERGENCY, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.

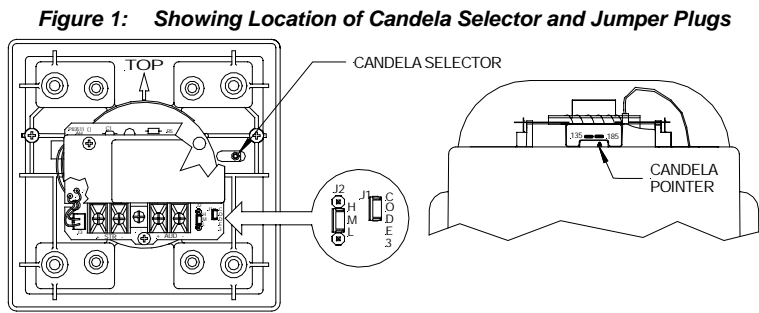
CAUTION: The strobe is not designed to be used on coded systems in which the applied voltage is cycled on and off.

NOTE: The horn circuit is compatible with coded systems only if the unit is wired for independent horn and strobe operation per Figure 3.

SOUND OUTPUT (SPL) AND CANDELA SETTINGS:



Reviewed for Code Compliance
Permitting and Inspections
Department
Approved Conditions
12/24/2019

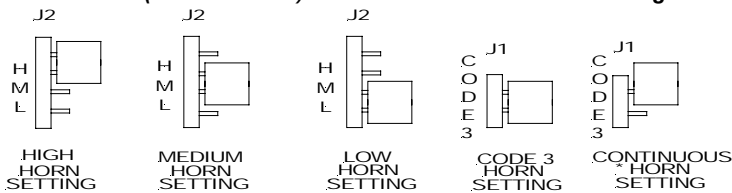


Factory setting is on 185 Candela, Medium dB and Code 3 (or March Time).

WARNING: THE CANDELA SELECT SWITCH MUST BE FIELD SET TO THE REQUIRED CANDELA INTENSITY BEFORE INSTALLATION. WHEN CHANGING THE SETTING OF THE CANDELA SELECT SWITCH, MAKE CERTAIN THAT IT "CLICKS" IN PLACE. AFTER CHANGING THE CANDELA SETTING, THE APPLIANCE MUST BE RETESTED TO VERIFY PROPER OPERATION.

WARNING: THE HS APPLIANCES MUST BE FIELD SET TO THE DESIRED TONE AND dBA SOUND OUTPUT LEVEL BEFORE THEY ARE INSTALLED. THIS IS DONE BY PROPERLY INSERTING JUMPER PLUGS IN ACCORDANCE WITH THESE INSTRUCTIONS.

Figure 2: Jumper Plug Settings for High, Medium, Low dB, Code 3 (or March Time) Horn and Continuous Horn Setting.



- Use needle nose pliers to pull and properly insert the jumper plug.
- No jumper plug is needed for continuous horn setting. However, it is recommended that the jumper plug be retained in the unit for future use (if needed) as shown in Figure 2.
- The HS-HMC must be set for Code 3 horn when used with the sync module. If the HS-HMC audible is connected to a coded system, the continuous horn setting must be used

WIRING AND MOUNTING INFORMATION:

Figure 3: Audible signal and strobe operate independently.

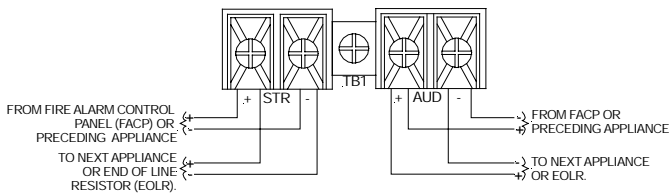


Figure 3A: Audible and strobe operate in unison. Shunt wires are supplied.

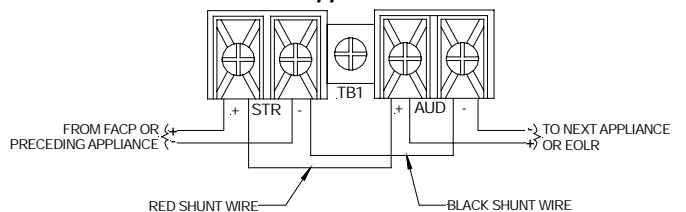
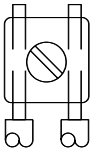


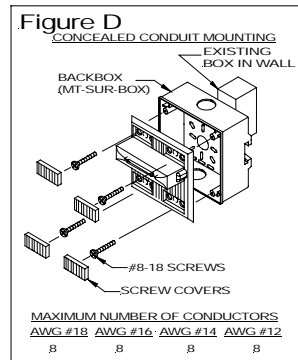
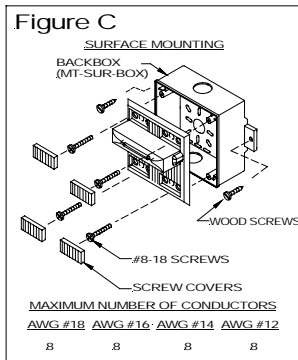
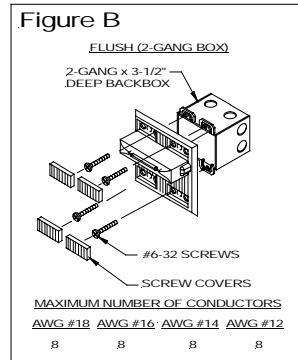
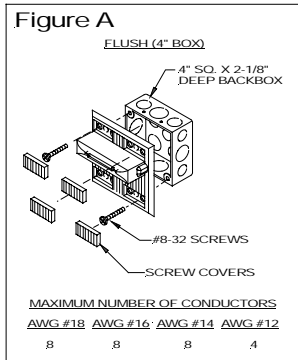


Figure 4:



- HS-HMC appliances have in-out wiring terminals that accepts two #12 to #18 American Wire Gauge (AWG) wires at each screw terminal. Strip leads 3/8" inches for connection to screw terminals.
- Break all in-out wire runs on supervised circuit supervision as shown in Figure 4. The polarity shown in the wiring diagrams is for the operation of the appliances. The polarity is reversed by the FACP during supervision.

The following figures (A-D) show the maximum number of field wires (conductors) that can enter the backbox used with each mounting option. If these limits are exceeded, there may be insufficient space in the backbox to accommodate the field wires and stresses from the wires could damage the product. Check that the installed product will have sufficient clearance and wiring room prior to installing backboxes and conduit, especially if sheathed multiconductor cable or 3/4" conduit fittings are used.



MOUNTING PROCEDURES:

1. This HS-HMC model can be flush mounted to a 100mm backbox (Figure A) or double-gang backbox (Figure B). It can also be surface mounted to a indoor/outdoor backbox (Figures C & D). Mounting hardware for each mounting option is supplied.
2. Conduit entrances to the backbox should be selected to provide sufficient wiring clearance for the installed product. Do not pass additional wires (used for other than the signaling appliance) through the backbox. Such additional wires could result in insufficient wiring space for the signaling appliance.
3. When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the appliance.
4. Use care and proper techniques to position the field wires in the backbox so that they use minimum space and produce minimum stress on the product. This is especially important for stiff, heavy gauge wires and wires with thick insulation or sheathing.
5. Connect field wires to the HS-HMC terminal block (polarity must be observed). Bend the field wires up 90° at the connection to the terminal block.
6. Carefully push the field wires into the backbox by hand. Press the HS-HMC to the backbox, verifying that it is seated and aligned correctly.
7. Fasten the HS-HMC to the backbox using the supplied screws.

The 135/185cd settings are Listed for use in sleeping or non-sleeping areas when installed in accordance with appropriate NFPA Standards and the Authority Having Jurisdiction.

⚠ WARNING: IF 135/185 CANDELA STROBES ARE INSTALLED IN SLEEPING AREAS, THEY SHOULD BE WALL MOUNTED AT LEAST 24" BELOW THE CEILING AS FOLLOWS: (1) THE ON-AXIS (CENTER OF LENS) LIGHT OUTPUT SHOULD BE DIRECTED AT THE EYELIDS OF THE SLEEPING PERSON, E.G. PILLOW END OF BED, BED HEAD; (2) NO PART OF THE BED SHALL BE MORE THAN SIXTEEN FEET FROM THE STROBE NOTIFICATION APPLIANCE. INSTALLERS MUST ADVISE OWNERS AND OPERATORS OF BUILDINGS WITH SLEEPING OCCUPANTS, E.G. HOTELS AND MOTELS, TO WARN GUESTS, RESIDENTS AND EMPLOYEES TO NOT MOVE THE BED LOCATION TO A POSITION VIOLATING POINTS (1) AND (2) ABOVE OR SERIOUS INJURY AND/OR LOSS OF LIFE MAY OCCUR DURING A FIRE EMERGENCY.

⚠ WARNING: A SMALL POSSIBILITY EXISTS THAT THE USE OF MULTIPLE STROBES WITHIN A PERSON'S FIELD OF VIEW, UNDER CERTAIN CIRCUMSTANCES, MIGHT INDUCE A PHOTO-SENSITIVE RESPONSE IN PERSONS WITH EPILEPSY. STROBE REFLECTIONS IN A GLASS OR MIRRORED SURFACE MIGHT ALSO INDUCE SUCH A RESPONSE. TO MINIMIZE THIS POSSIBLE HAZARD, SIEMENS STRONGLY RECOMMENDS THAT THE STROBES INSTALLED SHOULD NOT PRESENT A COMPOSITE FLASH RATE IN THE FIELD OF VIEW WHICH EXCEEDS FIVE Hz AT THE OPERATING VOLTAGE OF THE STROBES. SIEMENS ALSO STRONGLY RECOMMENDS THAT THE INTENSITY AND COMPOSITE FLASH RATE OF INSTALLED STROBES COMPLY WITH LEVELS ESTABLISHED BY APPLICABLE LAWS, STANDARDS, REGULATIONS, CODES AND GUIDELINES.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital appliance, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: 1) Reorient or relocate the receiving antenna, 2) Increase the separation between the equipment and receiver, 3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected, and 4) Consult the dealer or an experienced radio/TV technician for help.



**INSTALLATION INSTRUCTIONS
MULTI-CANDELA FOUR WIRE HORN STROBE APPLIANCES
(WALL MOUNT VERSION)**

IMPORTANT – All audible and visual signaling appliances must be installed in accordance with all applicable national and local fire alarm codes and any other required regulatory agencies.

Series HS-MC Multi-Candela Horn Strobe provides four selectable candela settings (15, 30, 75, 110). The HS-MC allows for independent operation of the strobe circuit and the horn circuit. It is the ideal choice for retrofit applications as well as new installations. The HS-MC appliance is UL Listed under Standard 1971 for Signaling Appliances for the Hearing Impaired and UL Standard 464 for Audible Signal Appliances. The HS-MC is also ULC Listed under Standard CAN/ULC-S526-02 for Visual Signaling Appliances and Standard CAN/ULC-S525-99 for Audible Signaling Appliances for Fire Alarm Systems. It is listed for **indoor use only** and can be mounted to double-gang, 4" backbox, 100mm European backbox or MT-SUR-BOX surface backbox (See wiring and mounting information). This appliance is listed for **wall mounting only**. The HS-MC appliance uses a xenon flashtube with solid state circuitry enclosed in a polycarbonate lens to provide maximum visibility and reliability for effective visible signaling.

Siemens Series HS appliances provide a selectable continuous or Code 3 horn tone and non-synchronized strobe when connected directly to a Fire Alarm Control Panel (FACP). They can also provide a synchronized Code 3 (or March Time) horn tone and synchronized strobe when connected to a notification appliance circuit running the Siemens sync protocol. HS appliances can be field set for High (HI), medium (MED) dBA or low (LO) dBA sound output. .

NOTE: The Code 3 temporal pattern (1/2 second on, 1/2 second off, 1/2 second on, 1/2 second off, 1/2 second on, 1-1/2 off and repeat) is specified by ANSI and NFPA 72 for standard emergency evacuation signaling. **The Code 3 Horn should be used only for fire evacuation signaling and not for any other purpose.**

The HS-MC is designed for use with either filtered DC or unfiltered full-wave-rectified (FWR) input voltage. All inputs are polarized for compatibility with standard reverse polarity supervision of circuit wiring by an FACP.

NOTE: All Canadian Installations should be in accordance with the Canadian Standard for the Installation of Fire Alarm Systems – CAN/ULC-S524-01 and Canadian Electrical Code, Part 1. Final acceptance is subject to authorities having jurisdiction (AHJ).

NFPA 72/ANSI 117.1 conform to ADAAG Equivalent Facilitation Guidelines in using fewer, higher intensity strobes within the same protected area.

NOTE: Refer to P/N 315-096363 for the maximum number of appliances on a single notification appliance circuit.

SPECIFICATIONS:

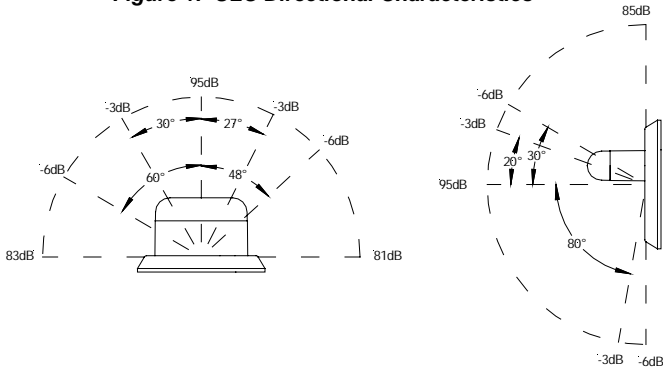
Model*	Operating Voltage (Special Application) Per UL 1971 (VDC/VRMS)	Voltage Range Per CAN/ULC-S526-02 (VDC/VRMS)	Strobe Candela (cd)
HS-MC	16.0-33.0	20.0-31.0	15/30/75/110

*Available in red and white.

Description	Volume	Reverberant Per UL 464			Anechoic dBA @ 10 Ft. Per CAN/ULC-S525-99		
		16.0VDC	24VDC	33.0VDC	20.0VDC	24VDC	31.0VDC
Continuous Horn	Low	80	83	86	88	90	91
	Medium	85	88	91	93	95	97
	High	88	91	93	97	99	100
Code 3 Horn or March Time**	Low	75	79	82	88	90	91
	Medium	80	84	86	93	95	97
	High	84	87	89	97	99	100

**Available in sync mode only.

Figure 1: ULC Directional Characteristics



- This model is UL/ULC Listed for indoor use with a temperature range of +32°F to +120°F (0°C to +49°C) and maximum humidity of 93% ± 2% RH. The effect of shipping and storage temperatures shall not adversely affect the performance of the appliance when it is stored in the original cartons and not subjected to misuse or abuse.



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NOTES:

- The strobe will produce 1 flash per second over the Input Voltage range.
- This horn/strobe model meets the required light distribution patterns defined in UL 1971 and ULC-S526-02.

When calculating the total current: Use Tables 3 & 3A to determine the highest value of "RMS Current" for an individual HS-MC then multiply the value by the total number of HS-MC Appliances. Be sure to add the currents for any other appliances powered by the same source and to include any required safety factors.

Note: These notification appliances are UL Listed as "Special Application". They are intended to be used only with Siemens notification appliance circuits.

CANDELA SETTING WILL DETERMINE THE CURRENT DRAW OF THE PRODUCT.

Table 3: Current Ratings (Horn Only)				
Maximum RMS Current (Amps)				
Input Voltage		Lo	Med	Hi
DC	16-33VDC	0.027	0.068	0.110
FWR	16-33VRMS	0.041	0.050	0.094

Table 3A: Current Ratings (Strobe Only)					
Maximum RMS Current (Amps)					
Input Voltage		15cd	30cd	75cd	110cd
DC	16-33VDC	0.064	0.098	0.175	0.233
FWR	16-33VRMS	0.108	0.164	0.268	0.368

THESE APPLIANCES WERE TESTED TO THE VOLTAGE LIMITS OF 16.0-33.0 VOLTS FOR 24V MODELS USING FILTERED DC OR UNFILTERED FULL-WAVE-RECTIFIED VOLTAGE. DO NOT APPLY VOLTAGE OUTSIDE OF THIS RANGE.

Note: Refer to the installation instructions for the appropriate NAC to find the maximum allowed voltage drop. Use this value along with the current draw for the appliance to determine the allowable wire resistance. The maximum wire resistance between strobes shall not exceed 35 ohms.

CAUTION: The strobe is not designed to be used on coded systems in which the applied voltage is cycled on and off.

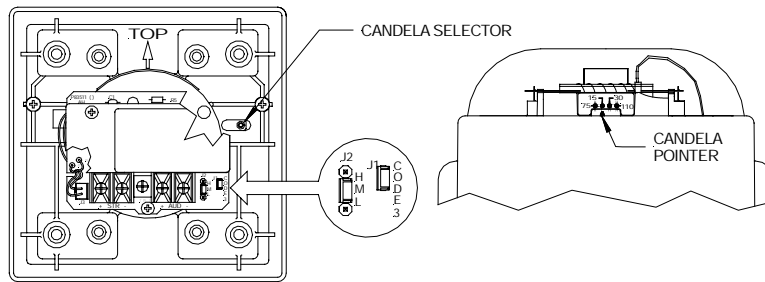
NOTE: The horn circuit is compatible with coded systems only if the unit is wired for independent horn and strobe operation per figure 4.

WARNING: MAKE SURE THAT THE TOTAL RMS CURRENT REQUIRED BY ALL APPLIANCES THAT ARE CONNECTED TO THE SYSTEM'S PRIMARY AND SECONDARY POWER SOURCES DO NOT EXCEED THE POWER SOURCES' RATED CAPACITY OR THE CURRENT RATINGS OF ANY FUSES ON THE CIRCUITS TO WHICH THESE APPLIANCES ARE WIRED. OVERLOADING POWER SOURCES OR EXCEEDING FUSE RATINGS COULD RESULT IN LOSS OF POWER AND FAILURE TO ALERT OCCUPANTS DURING AN EMERGENCY, WHICH COULD RESULT IN PROPERTY DAMAGE AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.



SOUND OUTPUT (SPL) AND CANDELA SETTINGS:

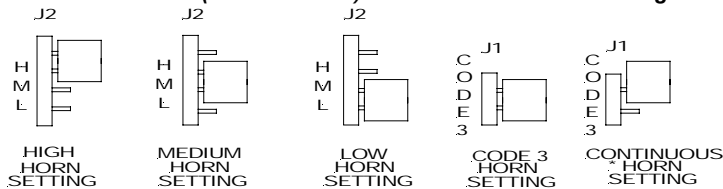
Figure 2: Showing Location of Candela Selector and Jumper Plugs



Factory setting is on 15 candela, Medium dB and Code 3.

WARNING: THE CANDELA SELECT SWITCH MUST BE FIELD SET TO THE REQUIRED CANDELA INTENSITY BEFORE INSTALLATION. WHEN CHANGING THE SETTING OF THE CANDELA SELECT SWITCH, MAKE CERTAIN THAT IT "CLICKS" IN PLACE. AFTER CHANGING THE CANDELA SETTING, THE APPLIANCE MUST BE RETESTED TO VERIFY PROPER OPERATION.

Figure 3: Jumper Plug Settings for High, Medium, Low dB, Code 3 Horn (or March Time) and Continuous Horn Setting.



- Use needle nose pliers to pull and properly insert the jumper plug.
- No jumper plug is needed for continuous horn setting. However, it is recommended that the jumper plug be retained in the unit for future use (if needed) as shown in Figure 3.
- The HS-MC must be set for Code 3 (or March Time) horn when used with the sync module. If the HS-MC audible is connected to a coded system, the continuous horn setting must be used.

WIRING AND MOUNTING INFORMATION:

Figure 4: Audible signal and strobe operate independently.

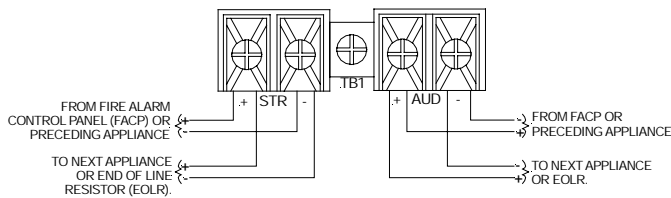


Figure 4A: Audible and strobe operate in unison. Shunt wires are supplied.

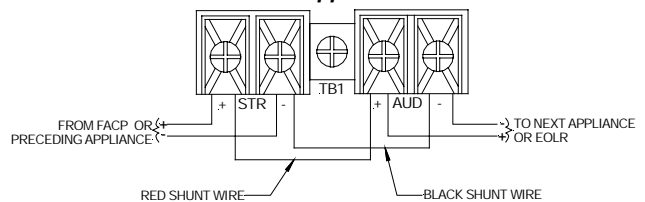
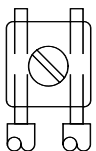
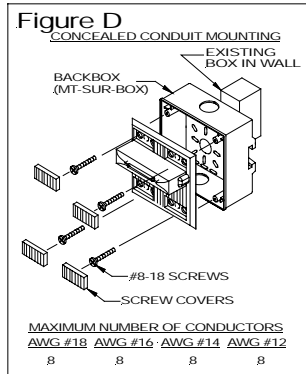
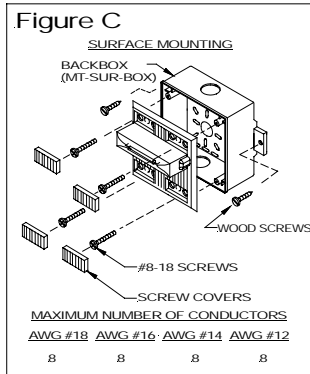
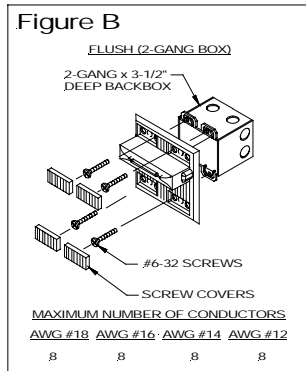
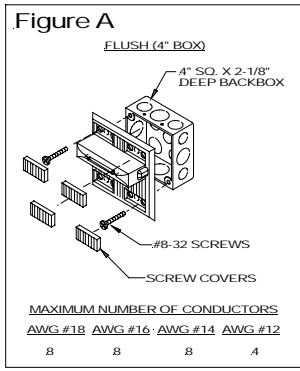


Figure 5:



- HS-MC Appliances have in-out wiring terminals that accepts two #12 to #18 American Wire Gauge (AWG) wires at each screw terminal. Strip leads 3/8" inches for connection to screw terminals.
- Break all in-out wire runs on supervised circuit supervision as shown in Figure 5. The polarity shown in the wiring diagrams is for the operation of the appliances. The polarity is reversed by the FACP during supervision.

The following figures (A-D) show the maximum number of field wires (conductors) that can enter the backbox used with each mounting option. If these limits are exceeded, there may be insufficient space in the backbox to accommodate the field wires and stresses from the wires could damage the product. Check that the installed product will have sufficient clearance and wiring room prior to installing backboxes and conduit, especially if sheathed multiconductor cable or 3/4" conduit fittings are used.



MOUNTING PROCEDURES:

1. This HS-MC model can be flush mounted to a 100mm backbox (Figure A) or double-gang backbox (Figure B). It can also be surface mounted to a indoor/outdoor backbox (Figures C & D). Mounting hardware for each mounting option is supplied.
2. Conduit entrances to the backbox should be selected to provide sufficient wiring clearance for the installed product. Do not pass additional wires (used for other than the signaling appliance) through the backbox. Such additional wires could result in insufficient wiring space for the signaling appliance.
3. When terminating field wires, do not use more lead length than required. Excess lead length could result in insufficient wiring space for the appliance.
4. Use care and proper techniques to position the field wires in the backbox so that they use minimum space and produce minimum stress on the product. This is especially important for stiff, heavy gauge wires and wires with thick insulation or sheathing.
5. Connect field wires to the HS-MC terminal block (polarity must be observed). Bend the field wires up 90° at the connection to the terminal block.
6. Carefully push the field wires into the backbox by hand. Press the HS-MC to the backbox, verifying that it is seated and aligned correctly.
7. Fasten the HS-MC to the backbox using the supplied screws.

The HS-MC 110cd setting is Listed for use in sleeping or non-sleeping areas when installed in accordance with appropriate NFPA Standards and the AHJ.

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MPC-6000 / MPC-7000 OPERATING INSTRUCTIONS

Alarm Operation

In case of alarm, the *System Alarm* LED flashes, LCD will display alarm conditions and the panel buzzer sounds. Local audible and visual signals and remote alarm signals operate.

When an alarm occurs, proceed according to the established emergency plan. Assure that all personnel are accounted for, and notify the Fire Department to advise of the alarm and/or verify that an automatic signal has been received at the Fire Department.

Authorized Personnel Only

To silence the alarm:

To silence the notification appliances after evacuation, where permitted, press the **Alarm Silence** switch. The notification appliances and panel buzzer will be silenced, and LED indications will change from flashing to continuous. The *Alarm Silenced* LED will be lit.

Note: Do not reset the panel until the alarm has been cleared.

Warning: Alarm silence inhibit (if set) prevents the alarm from being silenced for a predetermined time.

To reset panel after alarm:

When the alarm condition is corrected, return the panel to normal standby operation by pressing the **System Reset** switch.

Trouble Operation

Trouble is indicated by:

System Trouble LED flashes
LCD will display trouble conditions
Panel buzzer sounds

To silence the trouble buzzer:

Press the **Acknowledge** switch. The *Trouble Silenced* LED lights and the specific trouble LED(s) may change to continuous display. When the trouble condition has been cleared, you may need to reset the panel to restore to a normal standby condition.

Warning: Leaving the panel in a trouble condition may cause a fire alarm condition not to initiate a fire alarm sequence

Normal Standby Condition

The green *AC Power On* LED will be lit and no other indicators on.

For service, contact: _____
Telephone Number: _____

Frame these instructions and mount them near the control unit for operator reference.

 **FARADAY**
8 Fernwood Drive
Florham Park, New Jersey 07932

P/N 315-447311-2



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RSE-300

REMOTE SIGNAL EXPANDER

Owner's Manual

15073
P/N 447179
Issue 1 Rev. A

The Faraday logo consists of a series of vertical bars of varying heights followed by the word "FARADAY" in a bold, sans-serif font.
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Web: www.faradayfirealarms.com

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CONTROL UNIT LIMITATIONS

This control unit will not show an alarm condition without compatible initiating devices (smoke detectors, etc.) and notification devices (horn, lights, etc.) connected to it. Electrical ratings of the initiating and notification appliances must be compatible with the electrical ratings of the control unit and must be properly interconnected. The wiring used for interconnection must be large enough to carry the total current by all appliances without excessive voltage drop.

This control unit must be connected to a dedicated primary electrical source that has a high degree of reliability and adequate capacity for this control unit. The only means of disconnecting this power source shall be available only to authorized personnel and clearly marked "Fire Alarm Circuit Control."

This control unit must also have connected to it, a battery set (24V) that has enough capacity to properly operate the system for 4, 24 or 60 (depending on system type) hours standby and 5 minutes alarm per NFPA 72 (chapter 1). These batteries do lose capacity with age. Batteries must be replaced when they fail to provide the control unit with the required standby and alarm power or after 4 years, whichever happens first. These batteries must be checked for performance at least two (2) times per year or more often if local requirements dictate it.

Fire alarm control units cannot last forever. Even though this control unit was made to last for the expected life of the Fire Alarm Systems, any part could fail at any time. Therefore, a regular test program should be followed and documented to make sure that each part of the system is tested as per Chapter 7 of NFPA 72 or more often if dictated by local code requirements. Units that have malfunctioned must be replaced or repaired immediately by factory authorized service personnel.

Note: This control unit is designed to show an alarm condition when the initiating devices connected to it detect specific conditions. These conditions may or may not represent a life threatening condition (i.e., burnt toast may not be a life threatening condition but may cause an initiating device to indicate an alarm condition). Also, evacuation of a building or area may unnecessarily subject individuals to an unnecessary hazard. Therefore, it is most important that building owner, manager or representative promulgate, distribute and/or post instructions describing steps to be taken when the fire alarm control unit signals an alarm condition. These instructions should be developed in cooperation and conformance with representatives of the local authority having jurisdiction.

As a backup or precautionary measure, it is strongly suggested that one of these steps should be to notify the local fire department of an abnormal condition even where the city tie option (or similar device) is included in the system.



INSTALLATION AND WARRANTY INFORMATION

Warranty Information:

Faraday (the Manufacturer) provides a limited warranty to the Original Purchaser of this product. The Original Purchaser is the party to whom the Manufacturer issued its Sales Order, Generally, the Manufacturer's distribution. In order to preserve this warranty, it is important that the product be serviced only by persons who have been properly trained and authorized by the Manufacturer.

Other parties involved in the installation of this product may have also provided a warranty, which may be different than that of the Manufacturer. The Manufacturer will only be responsible to the Original Purchaser and only for the Manufacturer's own warranty. For further information regarding the Manufacturer's warranty, contact the Original Purchaser.

Owner's Manual:

The owner's manual does not purport to cover all the details or variations in the equipment described, nor does it provide for every possible contingency to be met in connection with installation, operation and maintenance. All specifications subject to change without notice. Should further information be desired or should particular problems arise which are not covered sufficiently, the matter should be referred to the Installer or Original Purchaser listed below.

Installer Information:

Company: _____ Installer: _____ Phone: _____
Address: _____ City: _____ State: ____ Zip: _____
Date Installed: _____ Installer's Signature: _____

Original Purchaser Information:

Company: _____ Phone: _____
Address: _____ City: _____ State: ____ Zip: _____
Purchaser's Purchase Order Number: _____
Date of Purchase: _____
Faraday Sales Order Acknowledgment Number: _____
Original Purchaser's Signature: _____



PREFACE

Along with the use of this Owner's Manual, the appropriate following standards and the manufacturers' instructions for initiating and signaling devices should be used to install and maintain a functioning Fire Alarm Signaling System.

NFPA 70-1996 National Electrical Code

NFPA 72-1999 National Fire Alarm Code

NFPA 101-1997 Life Safety Code

Other Standards - Contact the authority having jurisdiction for other standards that may apply.

For Publications, contact:

National Fire Protection Association
Batterymarch Park
Quincy, MA 02269



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1. DESCRIPTIONS

The 15073 is a notification and auxiliary power expander that provides up to 6 amps of 24 volts for powering notification appliances and auxiliary devices. The 15073 provides its own AC power connection, battery charging circuit, and battery connections. Used with a fire alarm control unit, this enables you to connect and distribute power to many more devices than your control unit may normally allow.

1.1 GENERAL DESIGN FEATURES

Inputs

The 15073 has two optically isolated inputs that provide the connection from the fire alarm control unit notification appliance circuit to the 15073. The inputs also provide a connection for returning a trouble condition to the control unit NAC.

The fire alarm control unit supervises its notification appliance circuit used for communicating with the 15073 the same way it supervises ordinary notification appliance circuits. The inputs on the 15073 monitor the polarity of the voltage coming from the fire alarm control unit's notification appliance circuits to determine when to operate the notification appliance circuit outputs. The 15073 emulates the trouble behavior of a notification appliance circuit by opening the EOL supervision current for trouble conditions. Note that the 15073 will sense the polarity of the fire alarm control unit's notification appliance circuits to drive the outputs whether or not the supervision connection is intact.

The following situations will open the EOL supervision at the inputs indicating a trouble condition:

No or Low AC power.

No and Low battery condition.

Ground fault to the output wiring.

Auxiliary Power Supply output over-current condition.

NAC output open, shorted and over-current condition on outputs associated with its input.

Notes:

If input 1 controls all four outputs, a fault on any output will cause input 1 to indicate trouble. The fault does not affect input 2.

If input 1 controls outputs 1 and 2, and input 2 controls outputs 3 and 4, a fault condition on output 3 or 4 will cause input 2 to indicate trouble. The fault does not affect input 1.

Once the inputs are driven with forward polarity to activate the outputs, the fire alarm control unit will not be able to sense trouble conditions through its notification appliance circuit connected to the 15073 input circuits. Use the 15073 trouble relay when it is necessary to monitor trouble conditions and active alarm conditions at the same time.

Notification Appliance Circuit Outputs

The 15073 has four dedicated, power-limited, NAC outputs that can be configured as two Style Z (Class A) or four Style Y (Class B) circuits.

The 15073 provides three configuration options that will drive outputs as slaves that will follow the input or if the inputs are on constant as ANSI temporal code or Sync strobe/horn operation.

Each of the four outputs is rated at 3 amps, though you can only draw a total of 6 amps from the 15073 outputs. The yellow *Output* LEDs (DS1-DS4) will indicate an open, shorted or over-current condition on its associated NAC Output.



You can select which input controls which output, and which inputs are Style Z (Class A) and Style Y (Class B) using the 10 position DIP switch on the printed circuit board. Refer to Section 5 for DIP switch settings.

Auxiliary Power Output

The 15073 has a dedicated, power-limited, auxiliary output that can be configured in two different ways. The auxiliary output can either be non-resettable (always on), or configured to switch off when the AC power goes off to conserve the battery standby power. When the auxiliary power is configured to switch off, there is a 30-second delay before the auxiliary power is turned off after the AC power goes off.

The Auxiliary Power Output is rated at 3 amps. Only a total of 6 amps maximum can be drawn from the 15073 outputs. The yellow *Aux PS* LED (DS5) will indicate an over-current condition on the output.

Trouble Relay

The 15073 includes a form C trouble relay that will de-energize for the following trouble conditions:

No or Low AC power.

No and Low battery condition.

Ground fault to the output wiring.

Auxiliary Power Supply output over-current condition.

NAC output open, shorted and over-current condition.

Battery Charging and Supervision

The 15073 provides a battery charging circuit for charging sealed lead-acid batteries. The unit also supervises for no and low battery conditions.

Ground Fault Detection

The 15073 monitors for ground faults to the output wiring. When detected, the unit lights the yellow *GRND* LED (DS6) and de-energizes the trouble relay and the input supervision relays.

Environmental

All hardware is suitable for use in an interior or protected location.

Power Limiting

The AC power and battery wiring are not power limited. All other circuits leaving the control unit are power limited, provided the proper installation rules are maintained.

Transient Protection

Transient protection devices are provided where needed to meet the requirements of UL864.

1.2 REGULATORY STANDARDS

The 15073 meets the requirements of industry and government regulatory agencies as noted.

Federal Communications Commission

The 15073 meets the class A requirements of the Code of Federal Regulations (CFR 47), Part 15, subpart J, for electromagnetic field emissions.

Underwriters Laboratories

The 15073 control unit is listed under UL Standard 864 for compliance to NFPA Standard 72 for fire service.



1.3 GENERAL SPECIFICATIONS

Operating specifications for the 15073 are as follows:

Environmental

- Operating temperature
32 - 120°F (0 - 49°C)
- Relative humidity
Up to 85% @ 86°F (30°C)

Primary Supply

- Primary Input Voltage: 120 VAC (50/60 Hz) nominal
- Maximum primary input current: 2.5A.

Secondary and Trouble Power Supply

- 24 volt lead-acid battery set:
- Maximum Charge Voltage: 27.8 VDC.
- Maximum Charge Current: 3.3 A.
- Maximum Input Current: 6.1A.
- Battery capacity: 7 to 15.0 A.H. (over 7 A.H. requires separate enclosure)

Input Circuits

- Two Input circuits
- For Power limited source
- Supervised
- Voltage Range: 18-30VDC/VFW
- Maximum Input Current: 6.0 mA

Notification Appliance Circuits

- Four Class B, Style Y circuits or two Class A, Style Z circuits
- Power limited
- Supervised
- Maximum Standby Current: 1.0 mA
- Alarm Voltage: 24 VDC nominal
- Maximum Alarm Current: 3.0 A.
- Maximum Ripple: 100 mVAC.
- Maximum Loop Drop Voltage: 1.5 VDC.

Auxiliary Power Output

- Current:
3 amp maximum for auxiliary power output.
(See battery calculations for limitations based on the battery size.)
- Power limited
- Not Supervised
- Voltage: 24 VDC nominal
- Ripple: 0.1 VAC maximum

Trouble Relay

- Contact Rating:
2.5 A, 30 VDC/VAC maximum, resistive
- Form "C" Contact



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2. INSTALLATION

CAUTIONS:

It is recommended that the printed circuit boards be removed for any procedure that may cause dust, metal shavings, grease or any such matter that may affect the circuit boards and/or parts.

There may be several sources of power into the control unit. Each source must be disconnected prior to installing or connecting or disconnecting wiring.

Each output circuit is rated at 3 amps. **DO NOT OVERLOAD.** Overloading a circuit will cause it to shut down (power limit).

2.1 PARTS SUPPLIED

15073 Remote Signal Expander (RSE-300)
447179 Owners Manual (315-099082FA)
942667 Resistor, 24K ohm 1/2 W, 5% (4)

2.2 CONTROL UNIT MOUNTING

The fire alarm control unit must be mounted in a properly accessible location as required by applicable codes. Any auxiliary battery box or other accessory not connected through a protective device or a circuit designed for remote connection must be within the same room and connected through electrical conduit. Installation is to be done only by qualified personnel who have thoroughly read and understood these instructions.

When mounting on interior walls, use appropriate screw anchors in plaster. When mounting on concrete, especially when moisture is expected, first attach a piece of 3/4-inch plywood to the concrete surface. Attach the 15073 to the plywood.



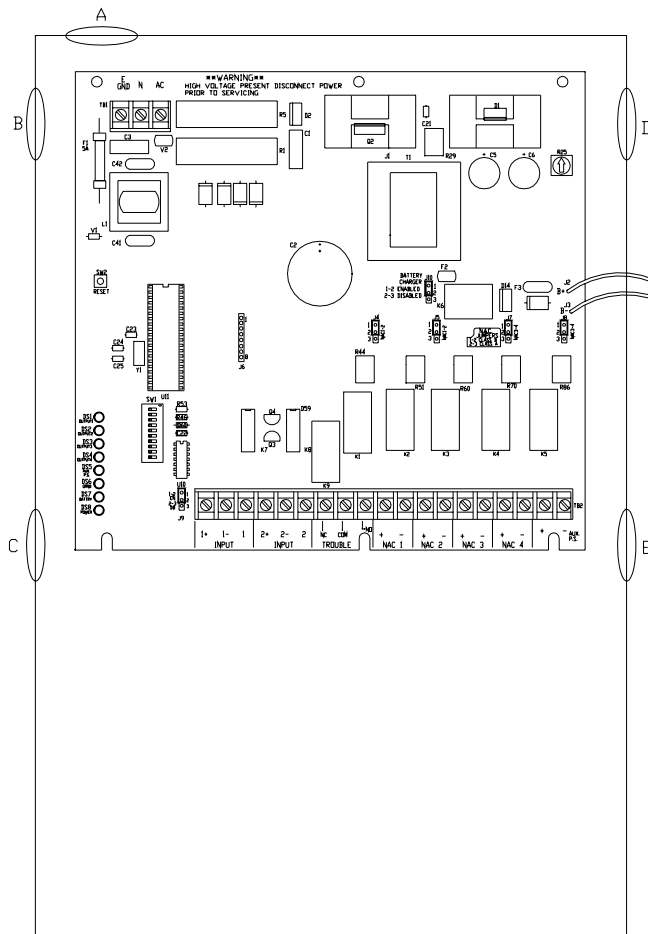
2.3 WIRE ROUTING

Notes:

All high voltage and non-power limited wiring must be kept separate from power limited wiring. A 1/4" separation must be maintained, with high voltage and non-power limited wiring running in separate conduit openings from power wiring.

To avoid induced noise (transfer of electrical energy from one wire to another), keep input wiring isolated from high current output and power-limited wiring. Improper wiring installation may cause improper operation. Avoid pulling one multi-conductor cable for the entire system. Instead, separate high current input/output from low current.

Wiring within the cabinet should be routed around the perimeter of the cabinet. It should not cross the printed circuit board where it could induce noise into the sensitive microelectronics or pick up unwanted RF noise from the switching power supply circuit.



- A. Non-power Limited - High Voltage (AC power) or B
- B. Non-power Limited - High Voltage (AC power) or A
- C. Power limited (or E)
- D. Non-power limited – (Battery wiring, if separate enclosure required)
- E. Power limited (or D)



2.4 TERMINAL DESCRIPTIONS AND ELECTRICAL RATINGS

Table 2-1. Terminal Descriptions

Terminal #	Description	Ratings	
TB1			
1	Earth Ground	120 VAC 50/60 Hz, 2.5A max.	
2	AC (white-"neutral")		
3	AC (black - "hot")		
TB2			
1	Input 1 (+)	18 - 30 VDC/VFW, 6mA max.	
2	Input 1 (-)		
3	Input 1		
4	Input 2 (+)	18 - 30 VDC/VFW, 6mA max.	
5	Input 2 (-)		
6	Input 2		
7	Normally Open contact	2.5 A @30 VDC/VAC, resistive	
8	Common		
9	Normally Closed contact		
10	NAC 1 Output (+)	24 VDC nominal, 3.0A max.	<i>Even though each output is rated for 3 amps, the total current draw from the 4 NAC outputs and the auxiliary power output must not exceed 6 amps.</i>
11	NAC 1 Output (-)		
12	NAC 2 Output (+)	24 VDC nominal, 3.0A max.	
13	NAC 2 Output (-)		
14	NAC 3 Output (+)	24 VDC nominal, 3.0A max.	
15	NAC 3 Output (-)		
16	NAC 4 Output (+)	24 VDC nominal, 3.0A max.	
17	NAC 4 Output (-)		
18	Auxiliary Power Output (+)	24 VDC nominal, 3.0A max.	
19	Auxiliary Power Output (-)		



2.5 WIRING THE 15073

Figure 2-2 shows the general layout of the 15073 PC board. This section also provides specific wiring details for accessories. Consult your control unit manual for specific wiring information on the control unit being used. If you are using a Faraday control unit, see Section 3 for connections.

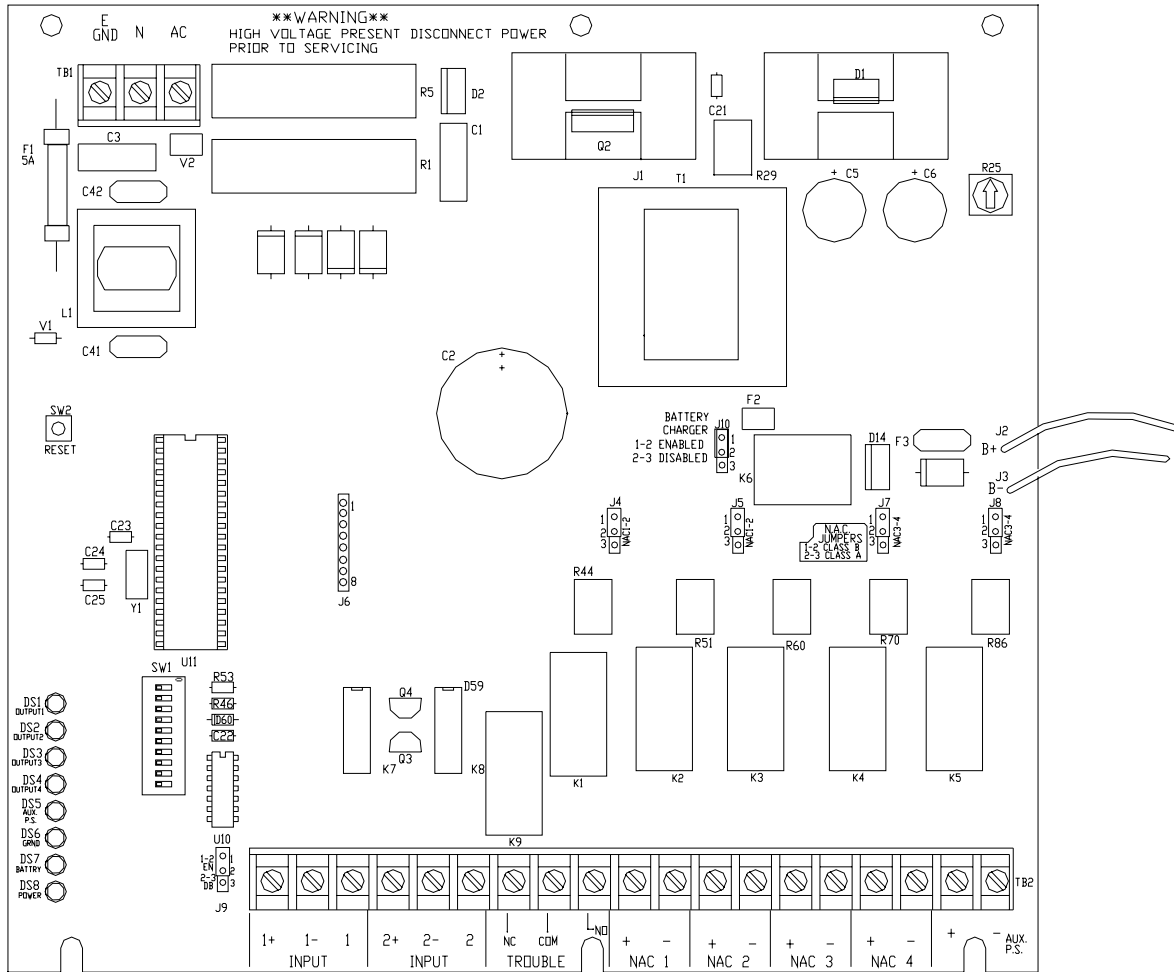


Figure 2-2. 15073 PC Board Layout



2.5.1 AC Wiring

120 VAC 60Hz. 2.5A MAX.
SUPERVISED, NON-POWER LIMITED

Note: Branch current must be protected by a 15A overcurrent device.

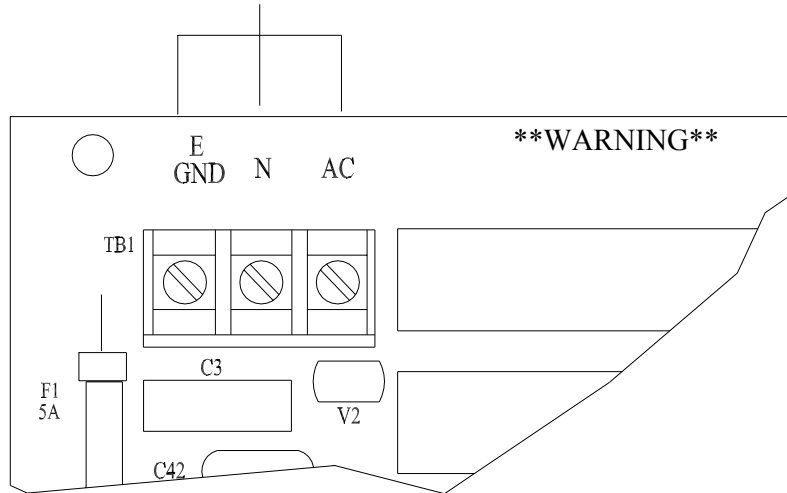


Figure 2-3. AC Wiring



2.5.2 Battery Connection

The 15073 requires a 24V sealed lead-acid battery set. The battery capacity can be from 7 to 15.0A.H. For battery sets larger than 7A.H., a separate enclosure is required.

The following steps and diagram explain how to connect the Faraday 14047, 7A.H. battery set.

1. Connect black wire to the negative (-) side of battery #2.
2. Connect jumper wire from the positive (+) side of battery #2 to the negative side of battery #1.
3. Connect red wire to the positive (+) side of battery #1.

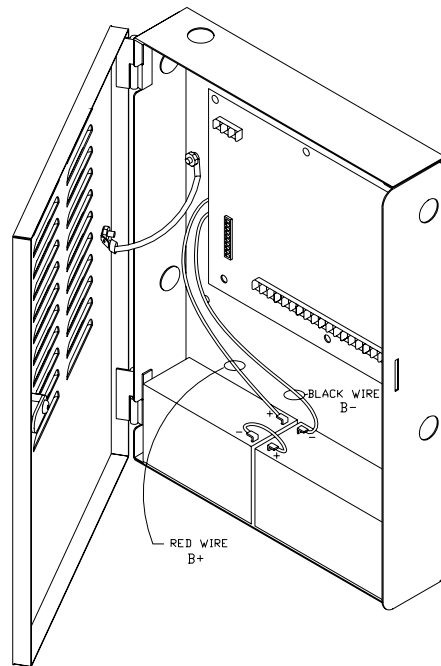


Figure 2-4. Battery Installation

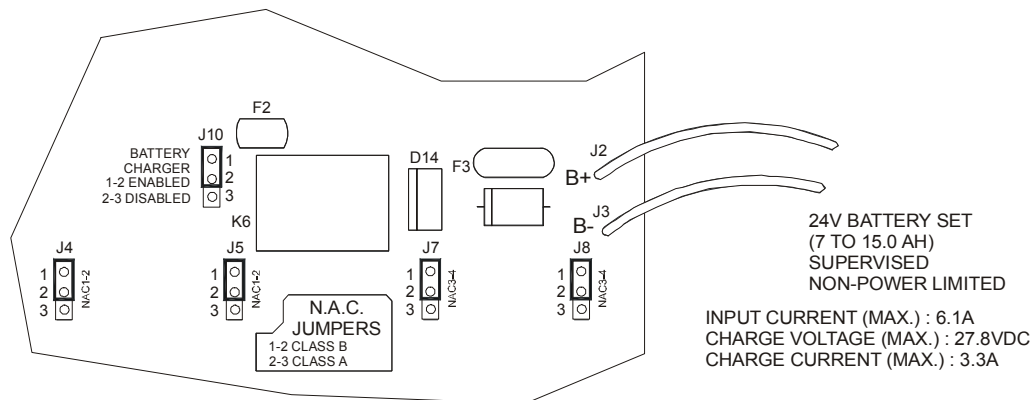


Figure 2-5. Battery Wiring



2.5.3 Style Y (Class B) Input/Output NAC Wiring

Figure 2-6 shows how to wire for Style Y (Class B) input and output supervision. Use in/out wiring methods for proper supervision. Compatible notification appliances are listed in Section 7.

Style Y (Class B) Output Notification Circuits

Figure 2-6 shows four, 1.5 amp devices wired as Style Y (Class B) circuits.

Place a 24K ohm EOL resistor (provided) at the end of each loop to enable notification output supervision when using all output as Style Y (Class B) notification circuits. The 24K EOLs must be wired to the terminals whether or not you are using all output terminals.

Style Y (Class B) Supervised Input Circuits

Figure 2-6 shows Style Y (Class B) supervised wiring from a fire alarm control unit to the 15073 board. Use an EOL resistor as shown to enable notification input supervision.

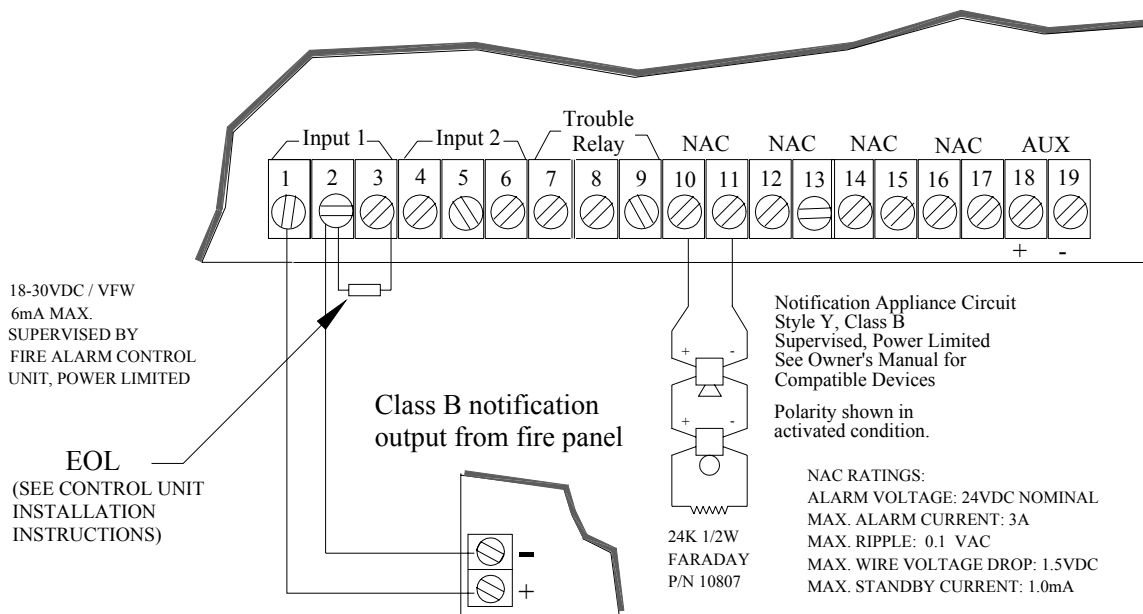


Figure 2-6. Style Y (Class B) Supervised Input/Output Connections



2.5.4 Style Z (Class A) Input/Output NAC Wiring

Figure 2-7 shows how to wire for Style Z (Class A) input and output supervision. Use in/out wiring methods for proper supervision. Compatible notification appliances are listed in Section 7.

Style Z (Class A) Output Notification Circuits

The configuration shown in Figure 2-7 shows two, 3-amp devices wired as Style Z (Class A) circuits. When you are using the outputs as Style Z (Class A) circuits, loop the wiring back to the corresponding circuit pair. For Style Z (Class A) wiring, no external EOL is necessary since it is built into the board.

Style Z (Class A) Supervised Input Circuits

The configuration shown in Figure 2-7 shows Style Z (Class A) supervised wiring from a fire alarm control unit to the 15073 board. Pay close attention to the polarities when wiring the unit and follow these requirements:

When wiring to terminal 2 and 5 on TB2, you must use two separate wires. Do not loop a single wire or twist two conductor wires together.

Do not use notification appliances on Style Z (Class A) circuits connected for input. The 15073 will detect voltage across the input circuits, but is not designed to pass the added current load from notification appliances.

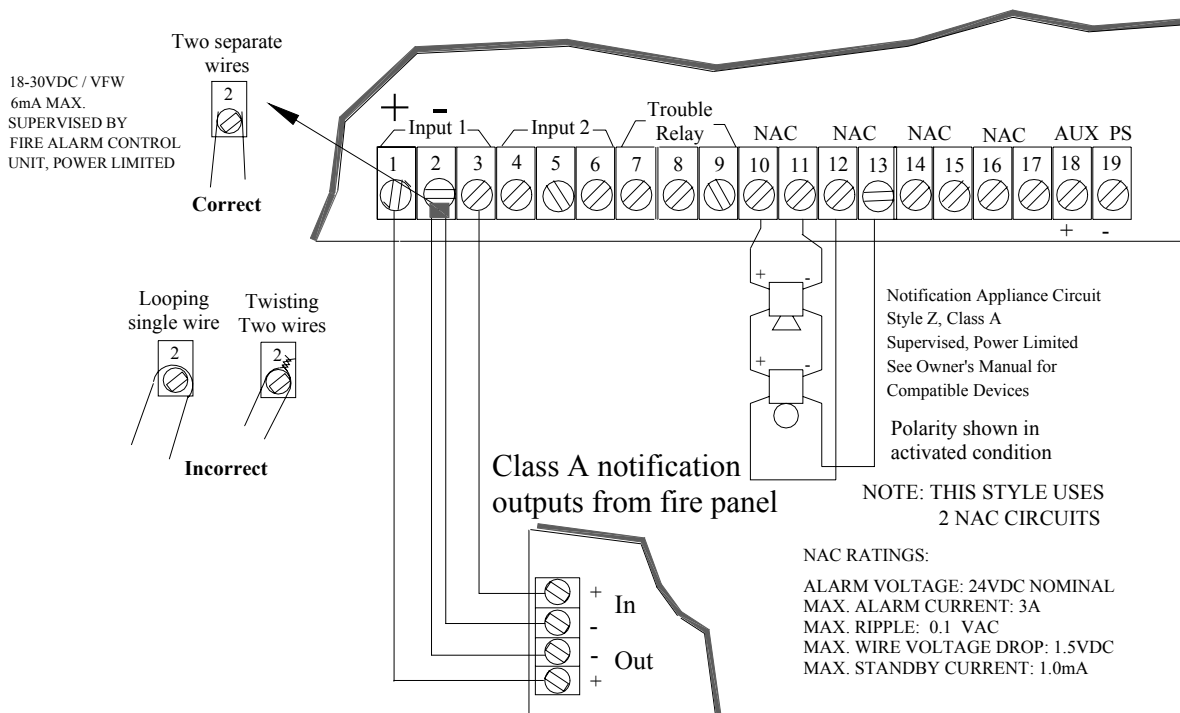
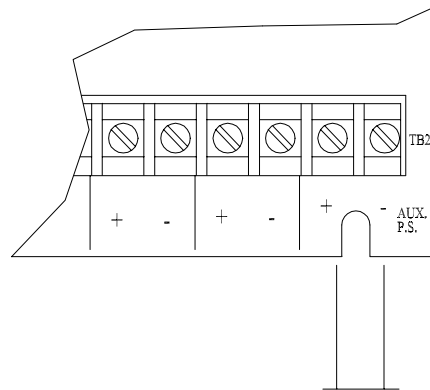


Figure 2-7 Style Z (Class A) Supervised Input/Output Connections



2.5.5 Auxiliary Power Supply Output



AUXILLIARY POWER OUTPUT
3A MAX. @ 24VDC NOMINAL
UNSUPERVISED, POWER LIMITED

Figure 2-8. Auxiliary Power Supply Output Connection

2.5.6 Trouble Relay

The 15073 board has a Form C trouble relay built into terminals 7-9 of TB2. The trouble relay will de-energize under a trouble condition.

A typical application of the trouble relay is to connect the 15073 normally closed (N.C.) contacts in series with an EOL of a spare IDC or NAC or monitor input from a fire alarm control unit. This will cause a trouble on the fire alarm control unit when the 15073 opens its trouble contacts.

Note: The N.C. contact is the relay contact that is closed when the 15073 has power and there are no trouble conditions.

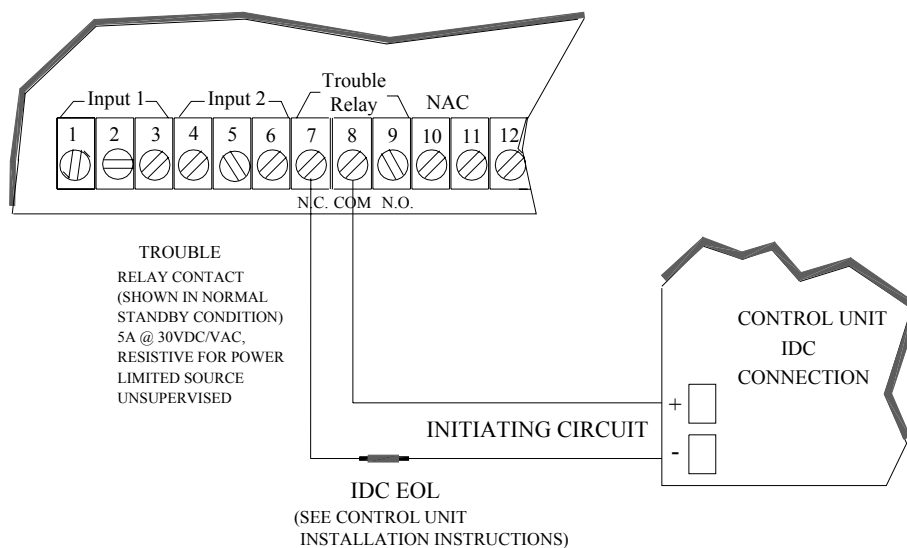


Figure 2-9. Trouble Relay Connection Example



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3 CONNECTION TO CONTROL UNITS

The drawings in this section show you how to connect the 15073 to compatible Faraday control units. See control unit owners manual for more information.

Faraday Cat. No.	Mfg. Part Number	Description
Faraday LLC		
MPC-1000	12100	Fire Alarm Control Unit
FW-4000	12400	Fire Alarm Control Unit
MPC-1500	12500	Fire Alarm Control Unit
FW-200	13200	Fire Alarm Control Unit
FW-400	13400	Fire Alarm Control Unit
FWII/FWII+2	15220/15240(A)	Fire Alarm Control Unit
LW-400	16400	Fire Alarm Control Unit
LW-401	16401	Fire Alarm Control Unit
LW-450	16450	Fire Alarm Control Unit
MPC-2000	2000/2001-xxx	Fire Alarm Control Unit
MPC-6000	MPC-6000	Fire Alarm Control Unit
MPC-7000	MPC-7000	Fire Alarm Control Unit
System Sensor		
9159	M500CH	Control Module

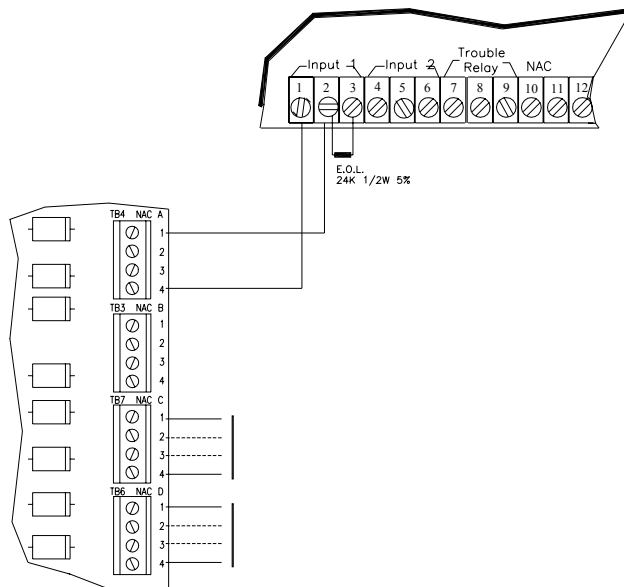


Figure 3-1. Connection to 12100 Fire Alarm Control Unit

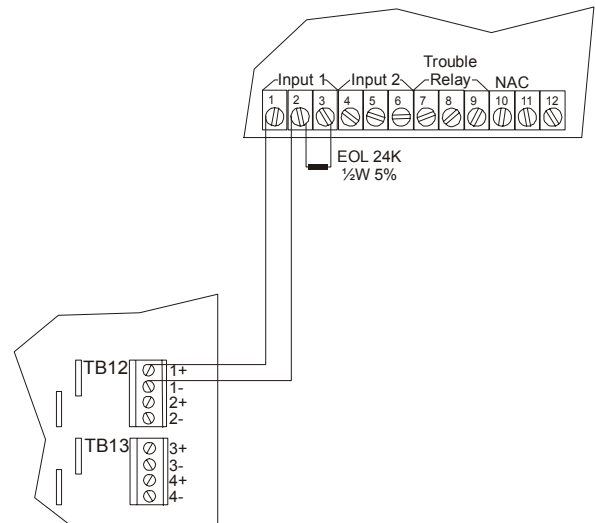


Figure 3-2. Connection to MPC-6000 / MPC-7000 Fire Alarm Control Unit

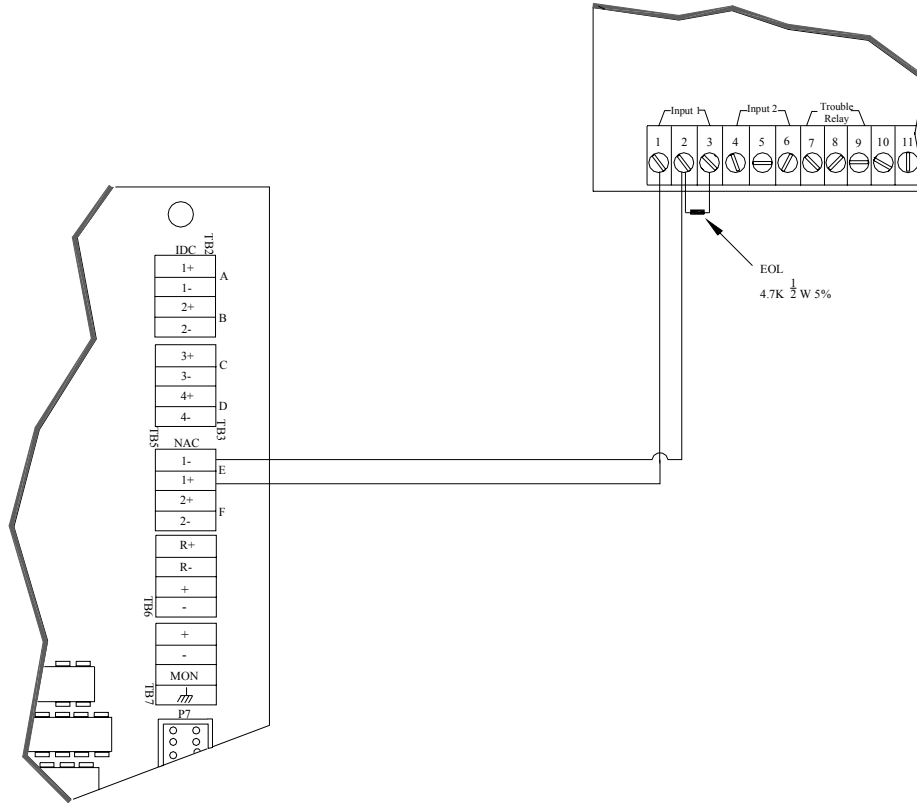


Figure 3-3. Connection to 12400 Fire Alarm Control Unit

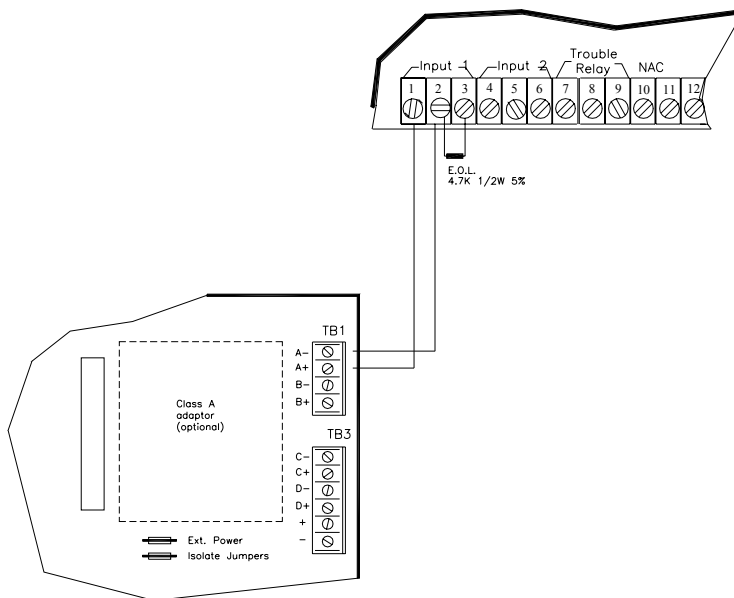


Figure 3-4. Connection to 12500 Fire Alarm Control Unit

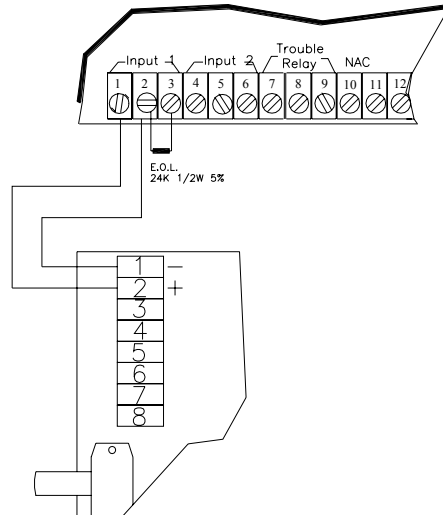


Figure 3-5. Connection to 13200 Fire Alarm Control Unit

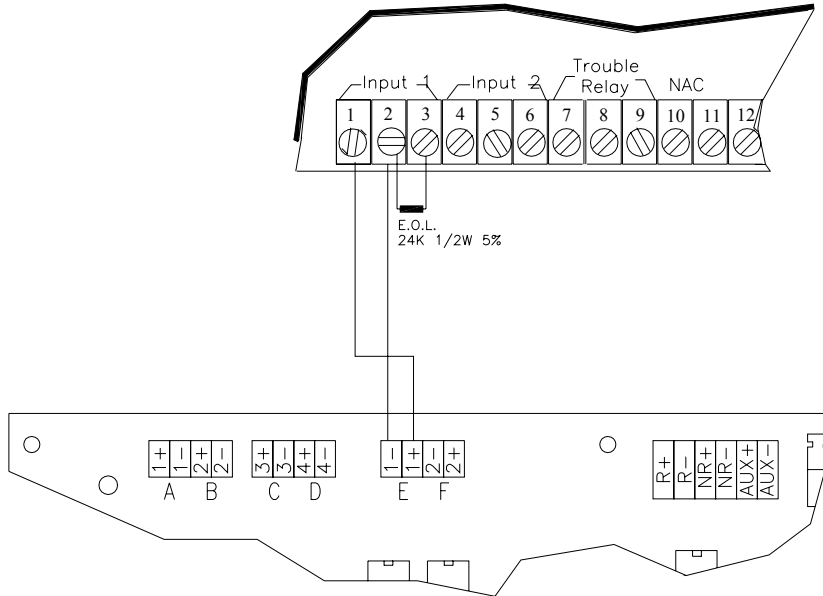


Figure 3-6. Connection to 13400 Fire Alarm Control Unit

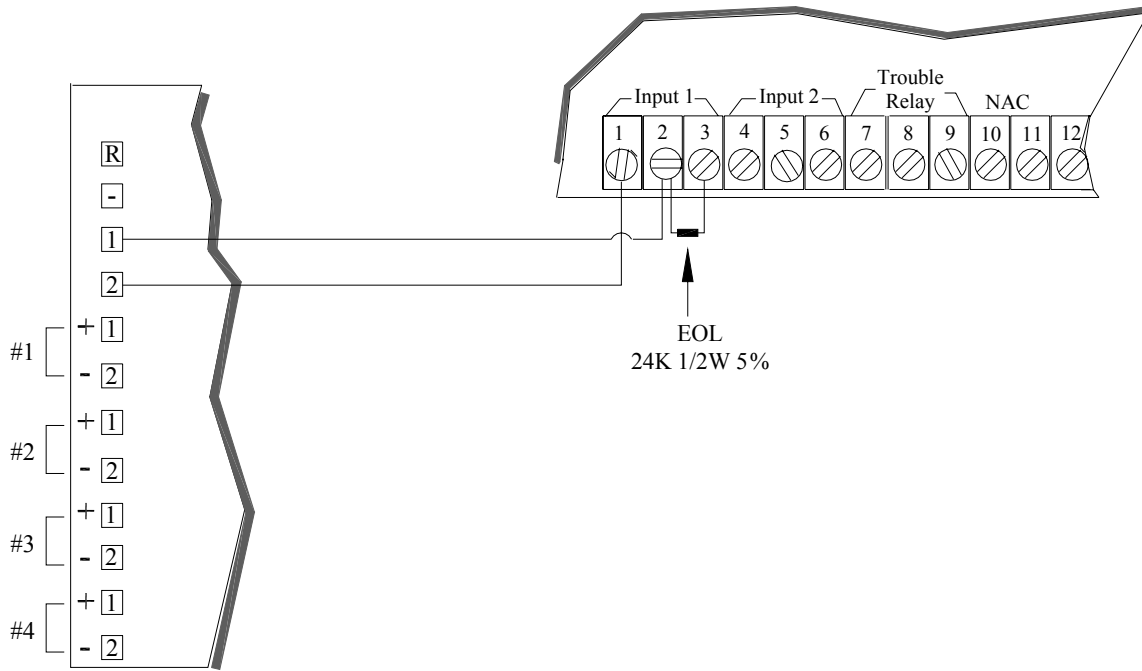


Figure 3-7. Connection to 15220/15240(A) Fire Alarm Control Unit

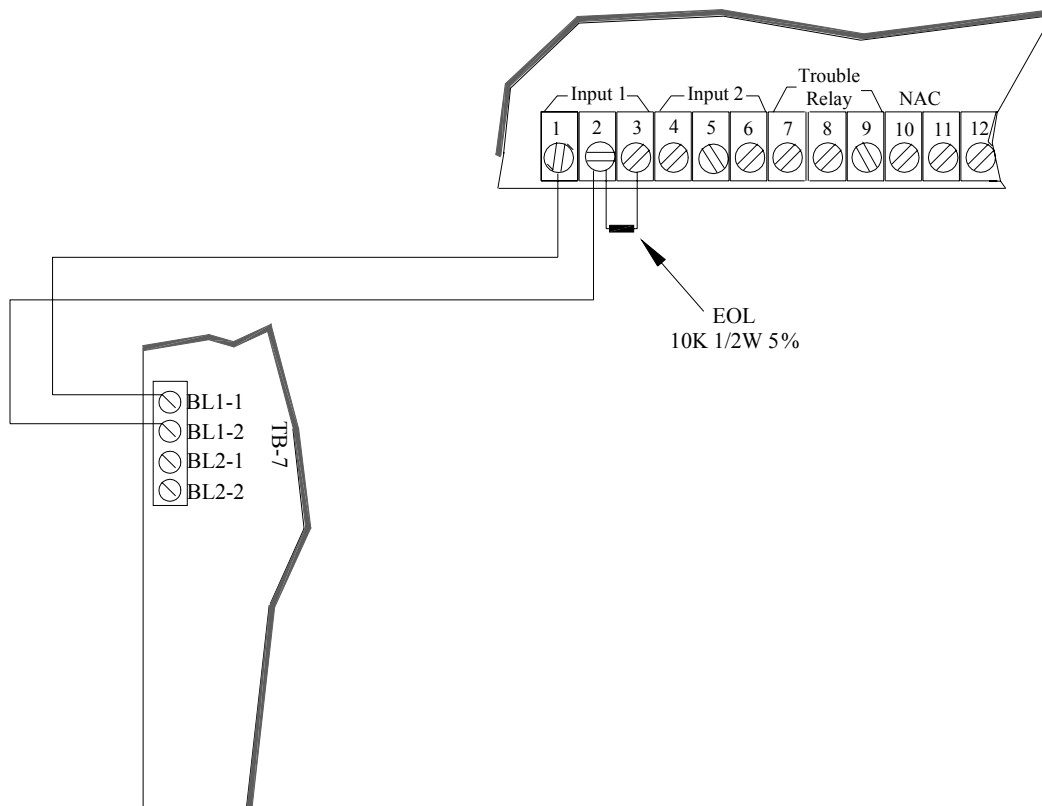


Figure 3-8. Connection to 16400 Fire Alarm Control Unit

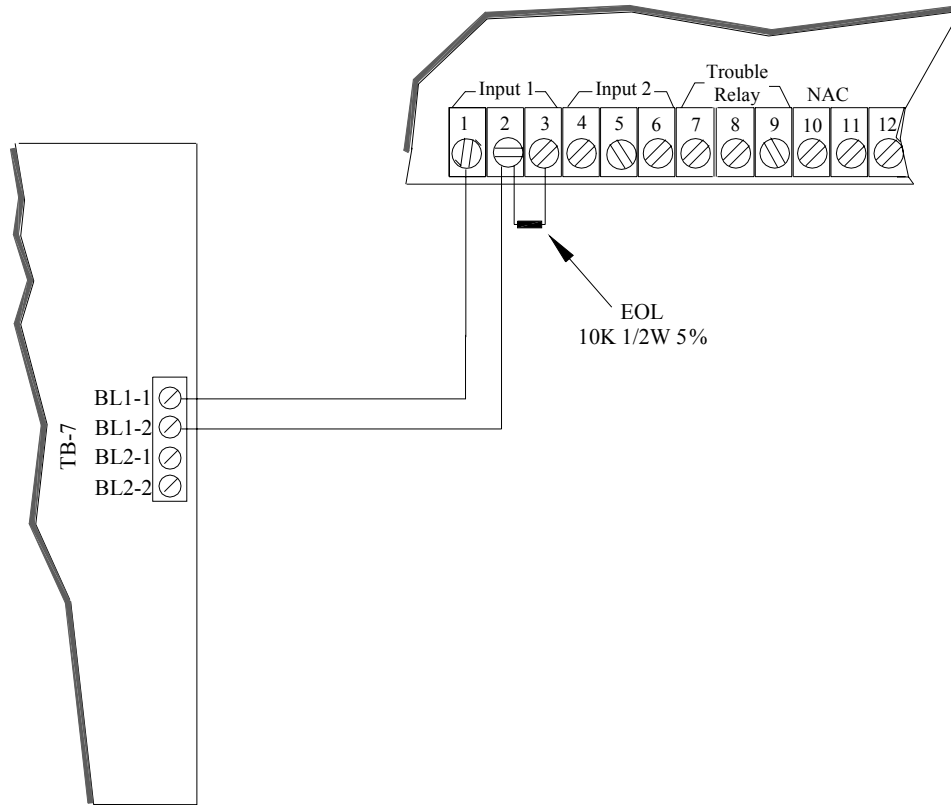


Figure 3-9. Connection to 16401 Fire Alarm Control Unit

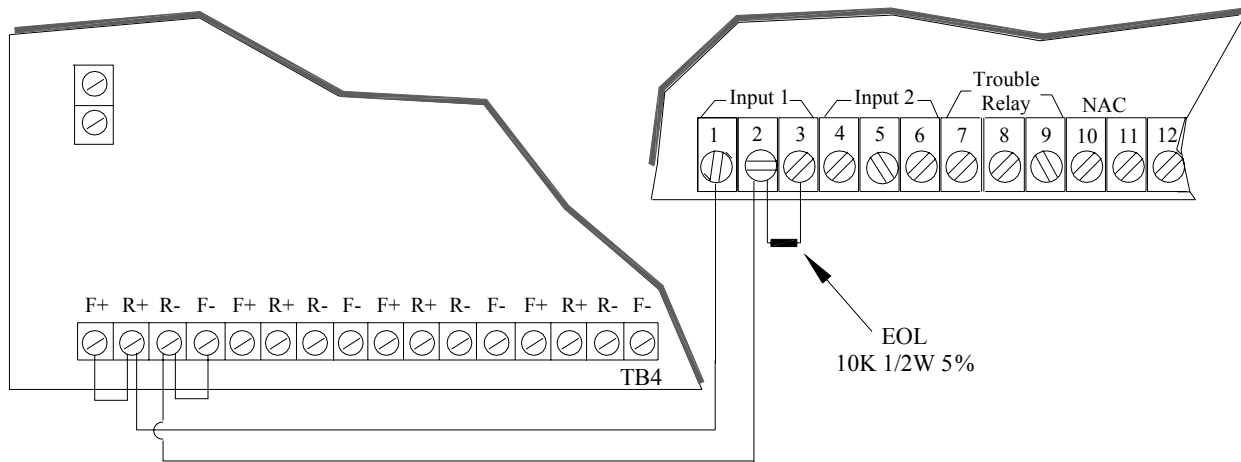


Figure 3-10. Connection to 16450 Fire Alarm Control Unit

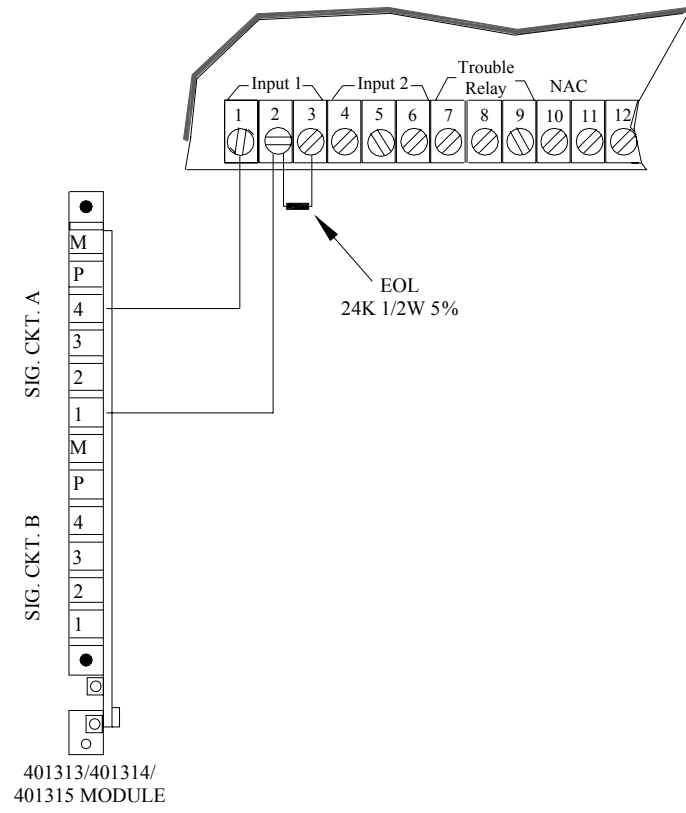


Figure 3-11. Connection to MPC-2000 Fire Alarm Control Unit

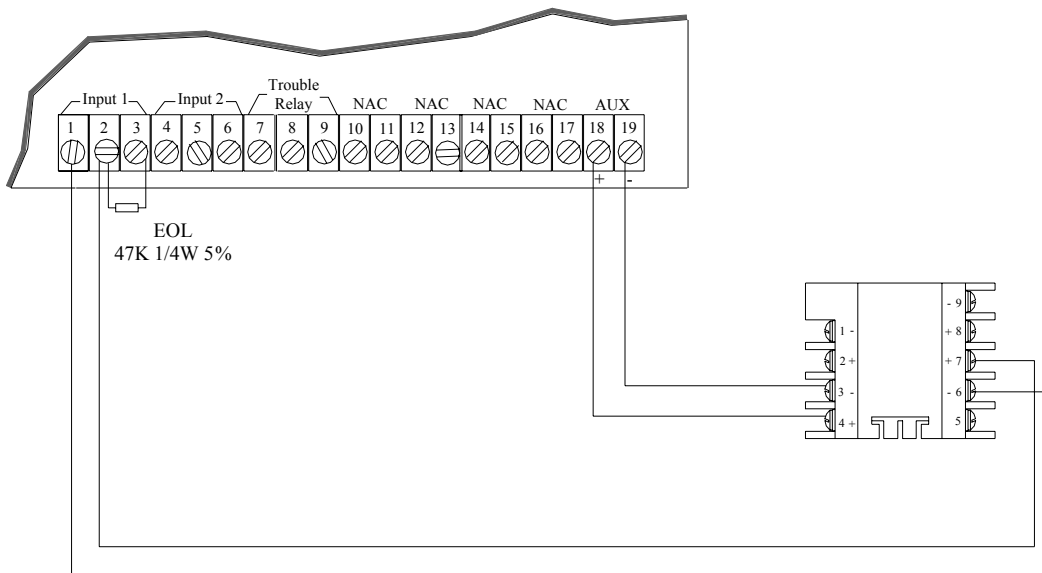


Figure 3-12. Connection to 9159 Control Module (System Sensor M500CH)

Note: Wiring shown must be in conduit and within 3 feet.



4 SAMPLE APPLICATIONS

The drawings in this section show various configurations, including daisy-chaining.

4.1 Notification Appliance Power Applications

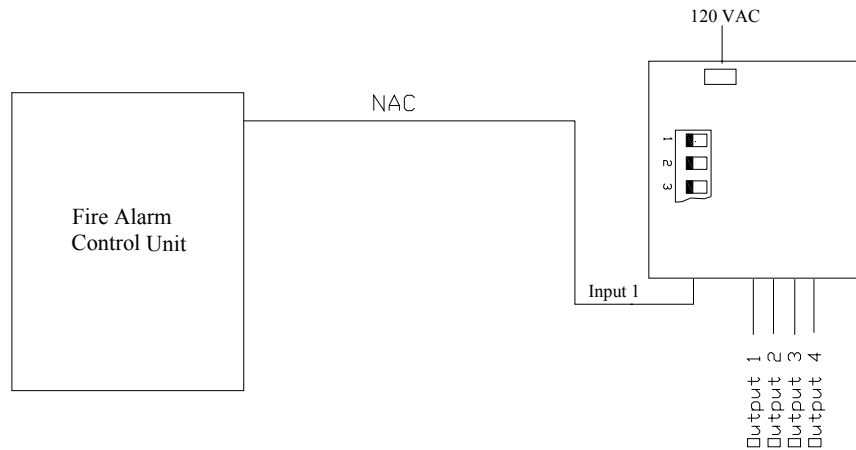


Figure 4-1. Input 1 activates All Four Outputs and Input 2 not used

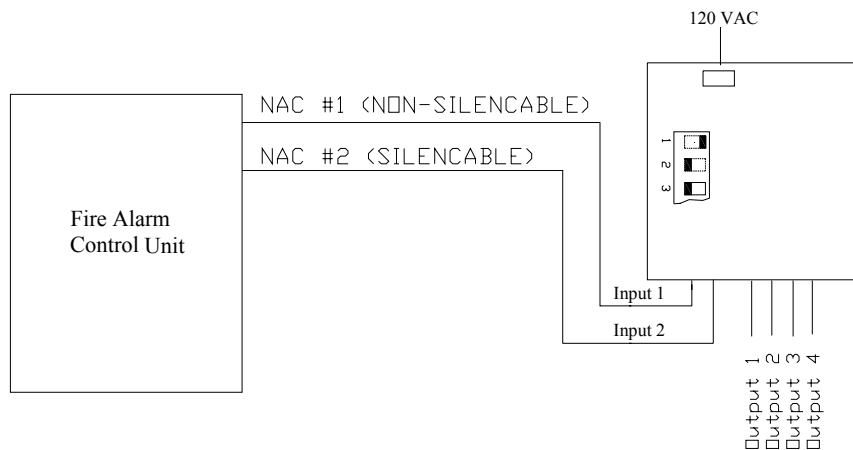


Figure 4-2. Input 1 activates All Four Outputs and Input 2 used to silence Sync Horns

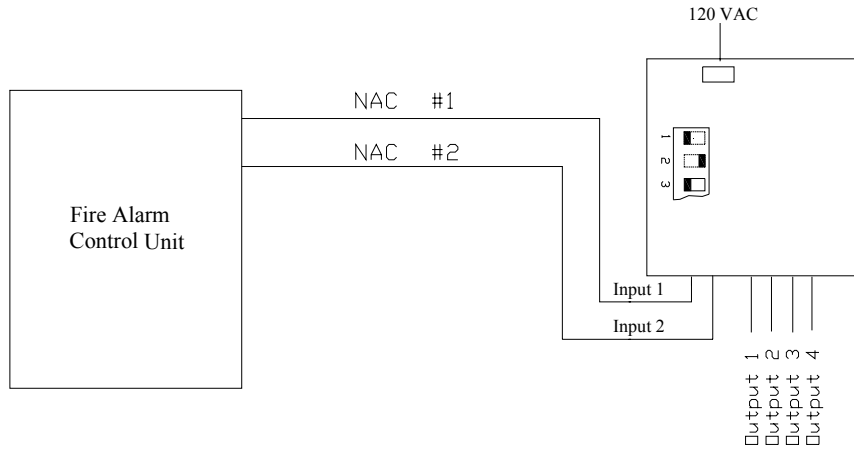


Figure 4-3. Input 1 activates Outputs 1, 2 & 3 and Input 2 activates Output 4

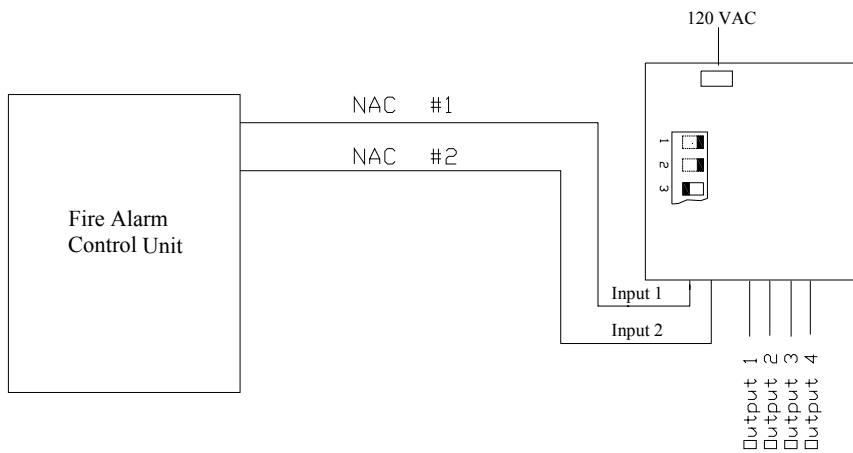


Figure 4-4. Input 1 activates Outputs 1 & 2 and Input 2 activates Outputs 3 & 4

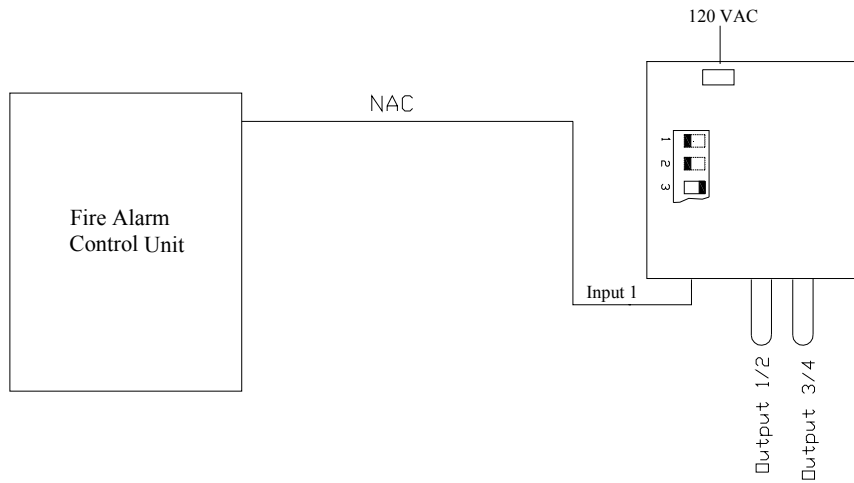


Figure 4-5. Input 1 activates Outputs 1-2 & 3-4 as Class A and Input 2 not used

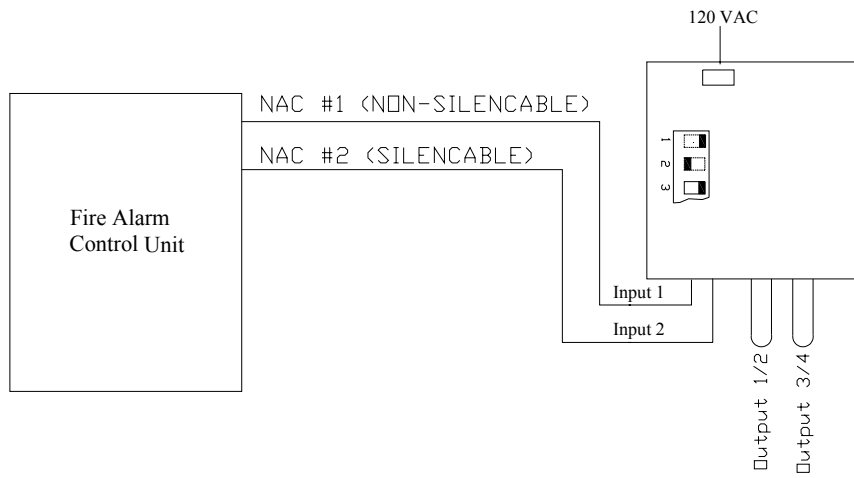


Figure 4-6. Input 1 activates Outputs 1-2 & 3-4 as Class A and Input 2 used to silence Sync Horns

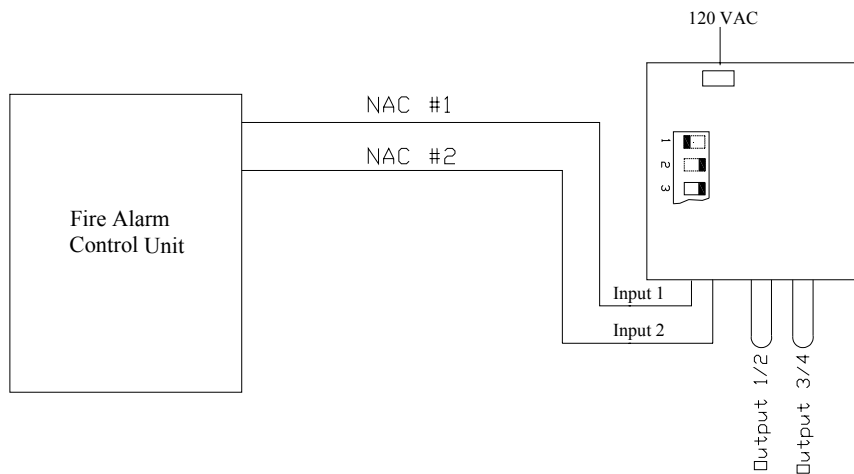


Figure 4-7. Input 1 activates Output 1-2 as Class A and Input 2 activates Output 3-4 as Class A

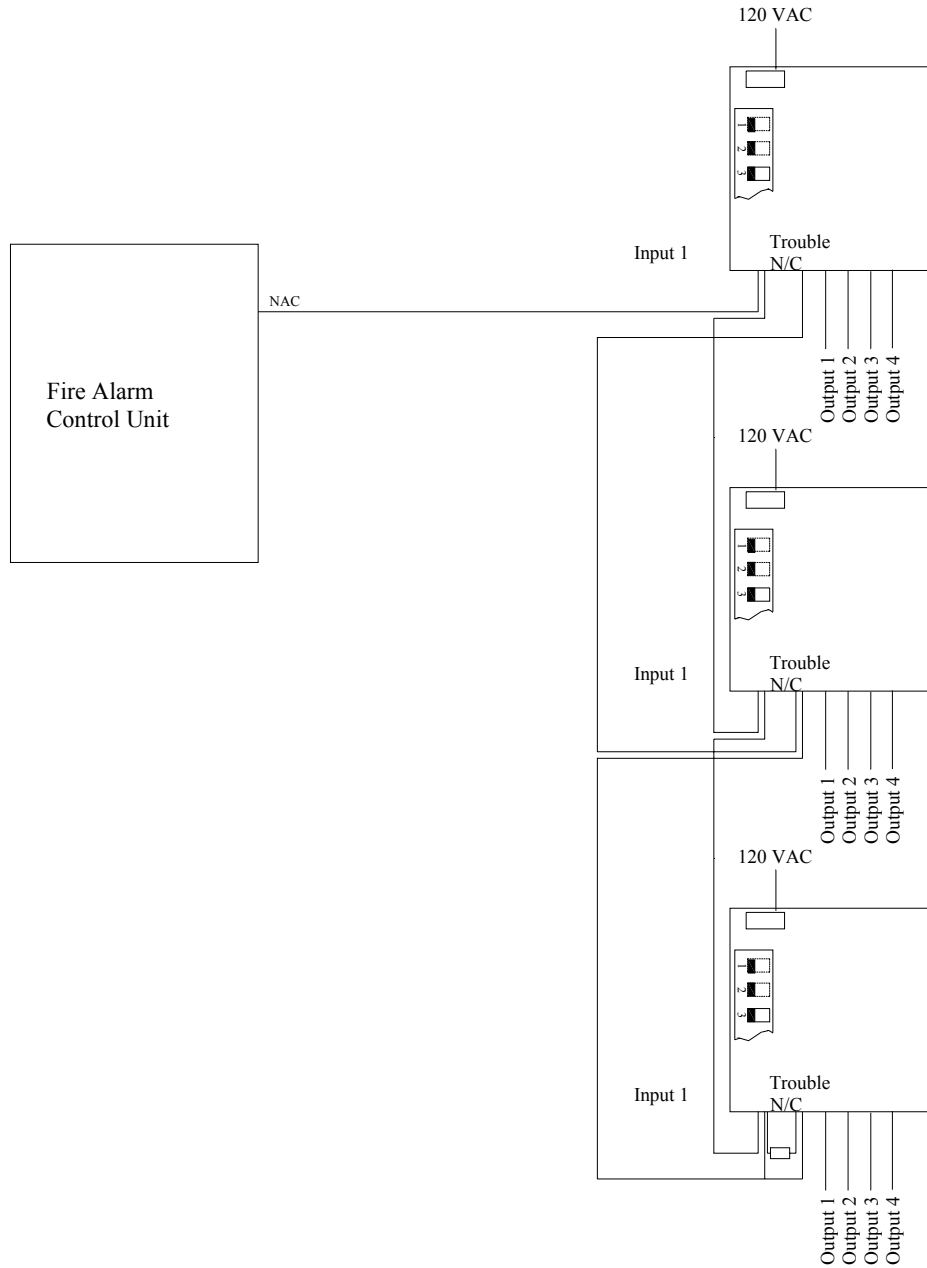


Figure 4-8. Fire Alarm Control Unit NAC activating more than one 15073 (Four wires required between units)

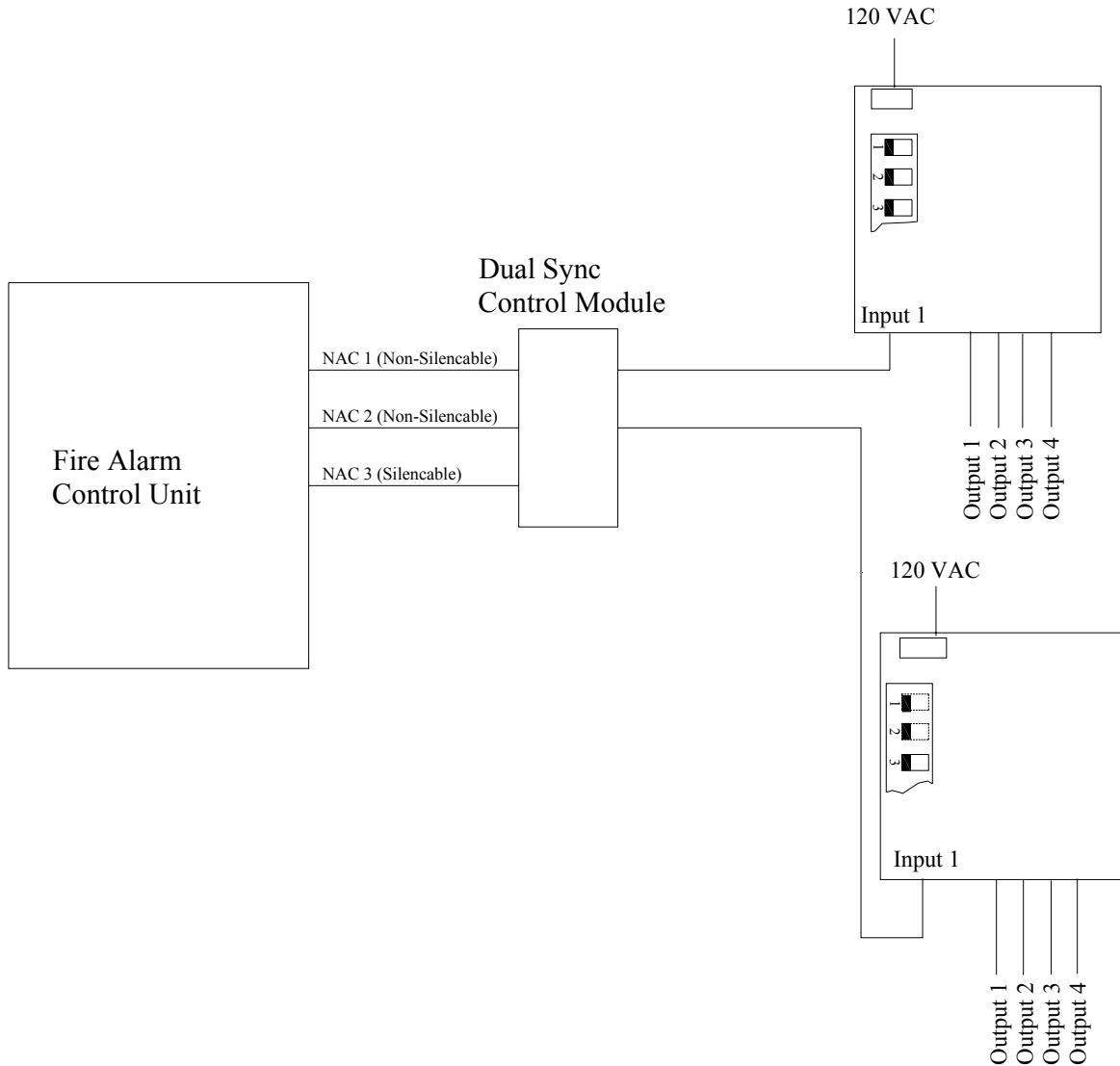


Figure 4-9. Fire Alarm Control Unit NACs activating two 15073s set for Slave Operation using the 5406 Dual Sync Control Module

Note:

The configuration in Figure 4-9 or Figure 4-10 must be used, when synchronization of Sync Strobes/Horns is required between NACs of different 15073s.

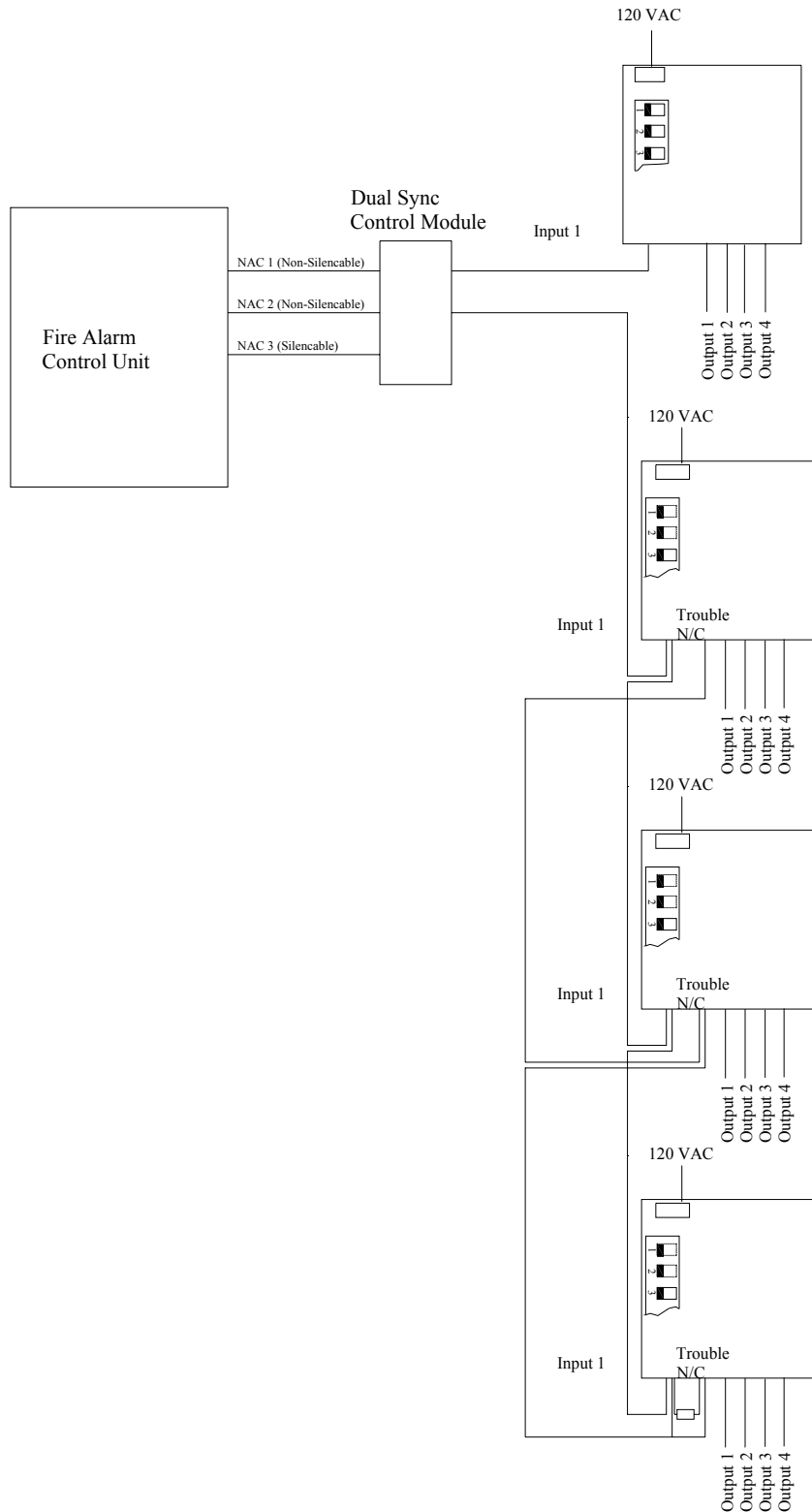


Figure 4-10. Fire Alarm Control Unit NACs activating more than one 15073 set for Slave Operation using the 5406 Dual Sync Control Module (Four wires required between units)

Note:

The configuration in Figure 4-9 or Figure 4-10 must be used, when synchronization of Sync Strobes/Horns is required between NACs of different 15073s.



4.2 Door Holder Applications

In a typical door holder application, the door holder power must be released to close all fire doors under the following conditions:

Any active alarm condition.

AC power is no longer present (to conserve backup battery power).

To close the fire doors in these situations, wire a normally closed relay contact from the fire alarm control unit in series with the auxiliary power to the door holders.

The circuit shown in Figure 4-11 will provide up to 3 amps of door holder power. The power in this example is released when AC power is off for 30 seconds or more, or when the relay from the fire alarm control unit opens. See Section 5.1.2 for selecting auxiliary power options.

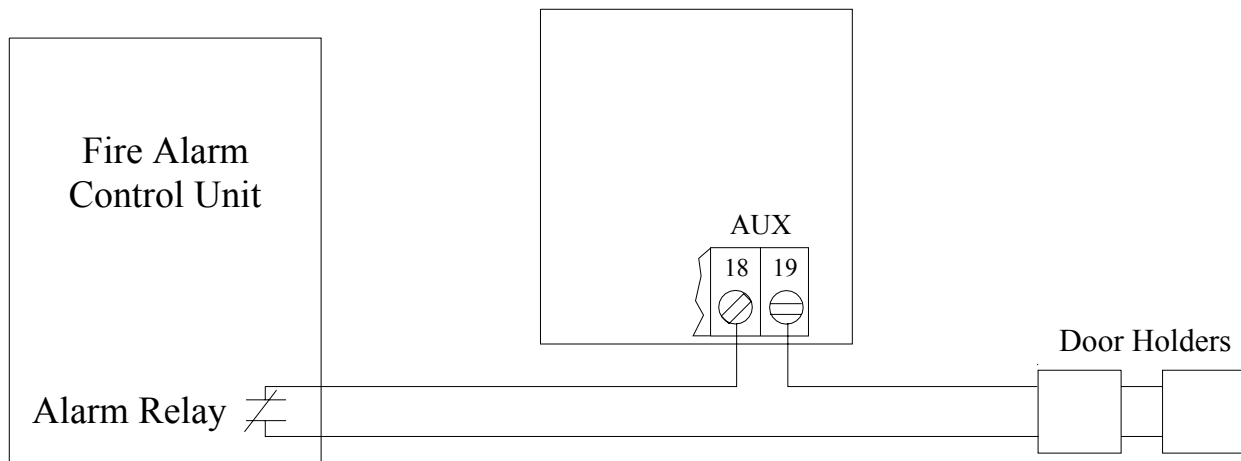


Figure 4-11. Door Holder Wiring Example



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5. PROGRAMMING

The 15073 functions are programmed with a 10-position DIP switch and six 3-position jumpers. The following section describes each setting.

5.1 DIP SWITCH SETTINGS

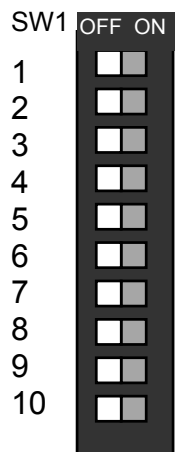
The 10-position DIP switch allows you to select the following:

- How long will the unit wait before indicating a loss of AC?
- Which input (Input 1 or Input 2) will control the NAC outputs?
- Which outputs to wire as Style Z (Class A) and Style Y (Class B)?
- Auxiliary power output operation on AC power fault?
- Which outputs to operate as steady outputs or ANSI temporal?

Refer to Figure 2-2 for the location of the DIP switch on the circuit board assembly.

All DIP switches are factory set for off; verify proper settings for proper system operation. Slide the switches to the left for OFF and to the right for ON.

Note: The unit checks DIP switch settings only when reset. If you change these switch settings, you must push SW2 reset switch to recognize the new DIP switch settings.





5.1.1 Selecting the Input/Output Configuration

Figure 5-1 shows the position of each switch on the DIP switch for various input and output configurations. The position of switch 4 through 10 does not affect the relationship of inputs to outputs.

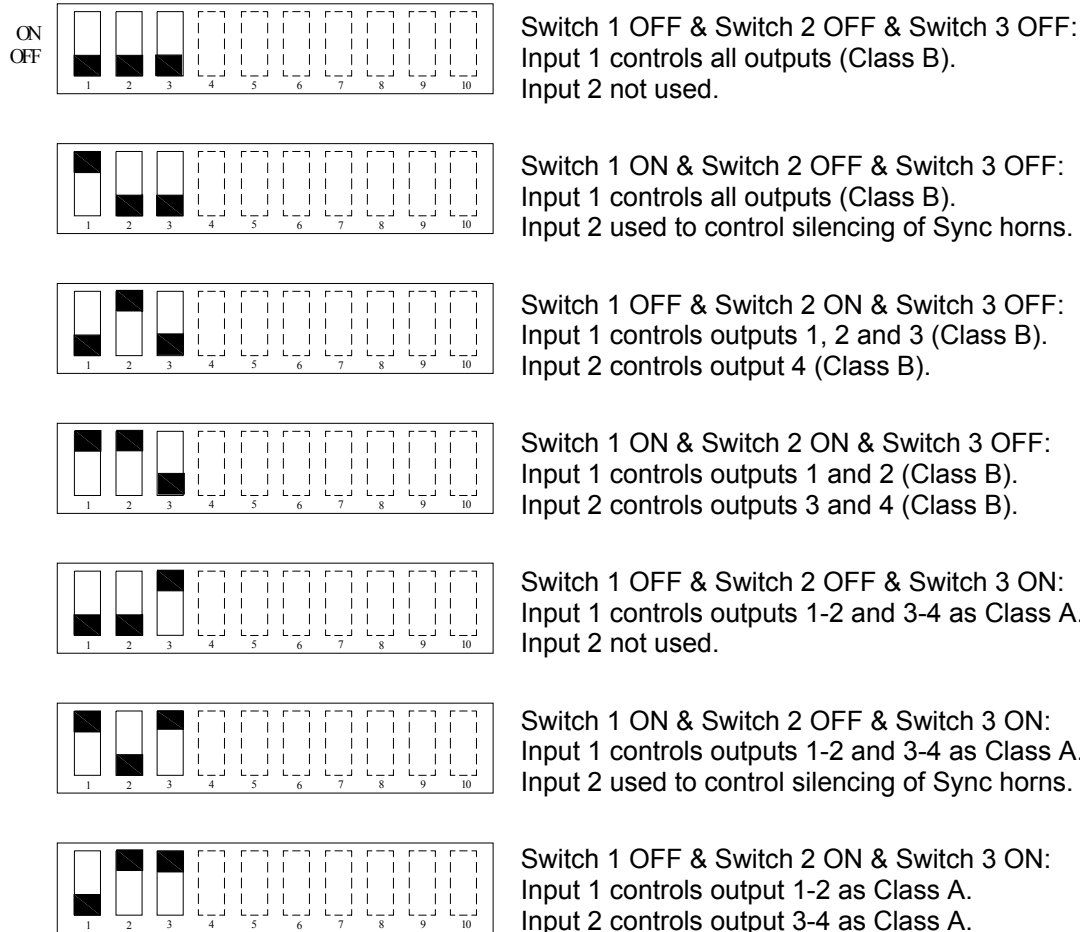


Figure 5-1. Setting DIP Switches 1-3

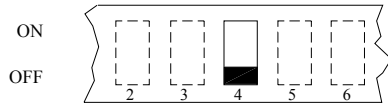
Note: Changing settings for DIP switches 1-3 may affect the settings for jumpers J4-J8.



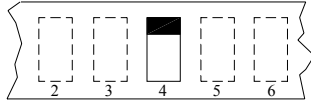
5.1.2 Setting the Auxiliary Output

Switch 4 on the DIP switch determines how the auxiliary power operates.

The 15073 checks switch 4 only when powering up. If you change this switch, you must push switch SW2 momentarily to reset the unit to recognize the new switch setting.



Switch 4 OFF:
Auxiliary Power Output always on.



Switch 4 ON:
Auxiliary Power Output will shutdown 30 seconds after an AC Power fault and the unit is running on battery.

Figure 5-2. Setting DIP Switch 4



5.1.3 Setting the Input's Control of their NACs

DIP switch settings 5 to 8 are designed to produce outputs from a constant on input. The figures shown below compare the output patterns of configurations before and after the addition of this feature.

Slave Operation

The Slave operation output follows the input and can be used when the fire alarm control unit NAC is steady, coded, march time, or temporal and the desired output is the same.

Master Temporal Operation

Master Sync Strobe/Horn Operation

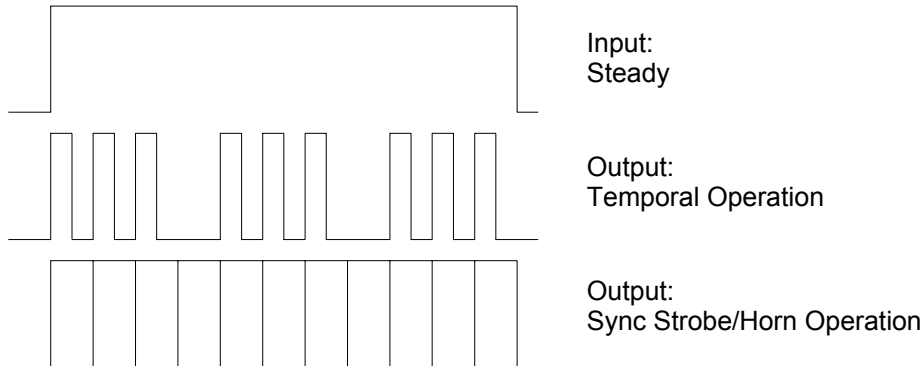
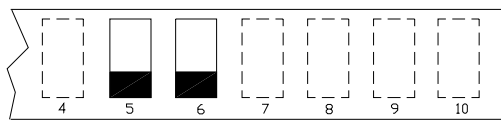
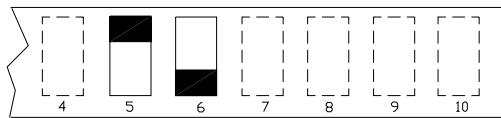


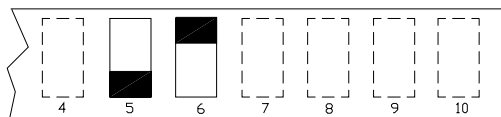
Figure 5-3. Master Input/Output Relationship



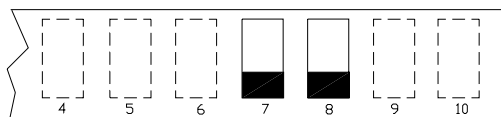
Switch 5 OFF & Switch 6 OFF:
Slave Operation-Input 1's outputs will follow the input pattern (steady in, coded, march time, temporal, or Sync).



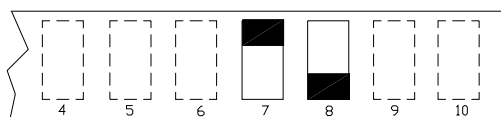
Switch 5 ON & Switch 6 OFF:
Master Temporal Operation-Inputs 1's outputs will be temporal when the input is on steady.



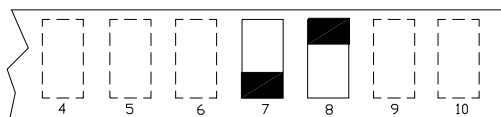
Switch 5 OFF & Switch 6 ON:
Master Sync Strobe/Horn Operation-Inputs 1's outputs will provide Sync signals when the input is on steady.



Switch 7 OFF & Switch 8 OFF:
Slave Operation-Input 2's outputs will follow the input pattern (steady, coded, march time, temporal, or Sync).



Switch 7 ON & Switch 8 OFF:
Master Temporal Operation-Inputs 2's outputs will be temporal when the input is on steady.



Switch 7 OFF & Switch 8 ON:
Master Sync Strobe/Horn Operation-Inputs 2's outputs will provide Sync signals when the input is on steady.

Figure 5-4. Setting DIP Switches 5-8

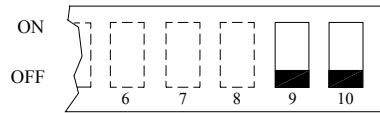


5.1.4 Setting the AC Power Fault Reporting Delay

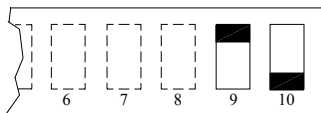
Normal selection for reporting loss of AC is 6 hours.

The OFF position is for test purposes only and the normal position for switch 9 is ON. For testing the Low AC reporting, you can temporarily turn switch 4 OFF without removing power.

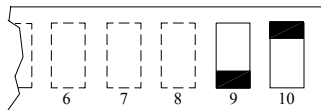
Remember to turn the switch ON when testing is complete.



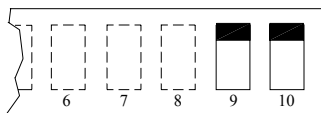
Switch 9 OFF & Switch 10 OFF:
AC power fault reporting will not be delayed.



Switch 9 ON & Switch 10 OFF:
AC power fault reporting will be delayed 6 hours.



Switch 9 OFF & Switch 10 ON:
AC power fault reporting will be delayed 15 hours.



Switch 9 ON & Switch 10 ON:
AC power fault reporting will be delayed 24 hours.

Figure 5-5. Setting DIP Switch 9 and 10



5.2 JUMPER SETTINGS

Factory settings are shown.

Note: Changing settings for J4-J8 also affect the settings for SW1 DIP switches 1-3.

J4 – NAC 1-2 Configuration (J5 must be set the same)



- 1 Class B
- 2
- 3 Class A

J5 – NAC 1-2 Configuration (J4 must be set the same)



- 1 Class B
- 2
- 3 Class A

J7 – NAC 3-4 Configuration (J8 must be set the same)



- 1 Class B
- 2
- 3 Class A

J8 – NAC 3-4 Configuration (J7 must be set the same)



- 1 Class B
- 2
- 3 Class A

J9 – Ground Detection Configuration



- 1 Enabled
- 2
- 3 Disabled

J10 – Battery Charger Configuration



- 1 Enabled
- 2
- 3 Disabled



6. REFERENCE DATA

This section provides reference for the following topics:

- Wire selection guides
- Battery size calculations

6.1 WIRE SELECTION GUIDES

6.1.1 Resistance of Solid Copper Wire

AWG	Ohms per Thousand Feet*
18	8.08
16	5.08
14	3.19
12	2.01

*NEC Chapter 9, Table 8.

6.1.2 Notification Appliance Circuit Wire Selection Guide

Each Notification Appliance Circuit must not have a voltage drop greater than 1.5V. The following chart is based on the following premises:

- The entire load is at the end of the wire run (worst case).
- Resistance is of solid copper wire.

Contact your local distributor or the factory if further information is needed in your circumstances.

Maximum Wire Loop Distance (Feet)

Signal Load (A)	18 AWG	16 AWG	14 AWG	12 AWG
0.5	371	591	940	1493
1.0	186	295	470	746
1.5	124	197	313	498
2.0	93	148	235	373
2.5	74	118	188	299
3.0	62	98	157	249



6.2 BATTERY SIZE CALCULATIONS

		Standby Current (A.)	Alarm Current (A.)
15073 Control Unit			0.140
DIP Switch SW1-4 off	0.035		
DIP Switch SW1-4 on	0.015		
4-wire Smoke Detectors			
Catalog #	Quantity	X Current (A.)	
	Standby	X = +	NA
	Alarm	X = NA	+
	Standby	X = +	NA
	Alarm	X = NA	+
End of Line Relay			
Catalog #	Quantity	X Current (A.)	
		X = +	+
		X = +	+
Door Holders			
Catalog #	Quantity	X Current (A.)	
		X = +	N/A
		X = +	N/A
Notification Appliances			
Catalog #	Quantity	X Current (A.)	
		X = NA	+
		X = NA	+
		X = NA	+
		X = NA	+
Other		= +	+
TOTAL			

Total Standby Current (from above)	Hours of Standby Required per NFPA 72 Standard (4, 24 or 60)	A.H. for Standby (without AC Reporting Delay)	A.H. for AC Reporting Delay 6 Hour = 0.240 AH 15 Hour = 0.600 AH 24 Hour = 0.960 AH	A.H. for Standby
A.	x _____ Hours	=	+	=

Total Alarm Current (from above)	5 Minutes of Alarm Operation per NFPA 72 Standard*	AH for Alarm
A.	x 0.0833 Hours	=

A.H. for Standby	A.H. for Alarm	Calculated A.H.	De-rating Factor	A.H. Required Battery Capacity
	+	=	X 1.25	=

Notes:

- The Alarm current must never exceed 6.14 Amps
- The following states the maximum standby current allowed:
[When the Auxiliary Power Output is programmed to shutdown on AC power fault (SW1.4-ON), up to 3.015 Amps is allowed.]

Standby Hours	Maximum Standby Current (A.)		
	7AH	10AH	15.0AH
4	1.272	1.872	2.872
24	0.212	0.312	0.478
24 (a)	0.202	0.302	0.468
60	0.084	0.124	0.191
60 (b)	0.074	0.114	0.181
60 (c)	0.068	0.108	0.175

- AC Reporting Delay set for 6 Hours
- AC Reporting Delay set for 15 Hours
- AC Reporting Delay set for 24 Hours



7. COMPATIBLE DEVICES

7.1 DEVICES FOR NOTIFICATION APPLIANCE CIRCUITS

The following lists compatible devices for the auxiliary power outputs.

- Notification Appliances
- Accessory Devices

7.1.1 Notification Appliances

Catalog Number	Description	Audible Voltage	Audible Current	Strobe Voltage	Strobe Current
446(*1)	Bell-Vibrating	21-30VDC	0.110A		
476(*1)	Bell-Vibrating	21-30VDC	0.070A		
477(*1)	Bell-Single Stroke	21-30VDC	0.360A		
2700-E	Strobe Light			20-31VDC	0.059A
2700-G	Strobe Light			20-31VDC	0.089A
2700-J	Strobe Light			20-31VDC	0.155A
2700-K	Strobe Light			20-31VDC	0.164A
2700-L	Strobe Light			20-31VDC	0.249A
2700-M (*2)	Sync Strobe Light			20-31VDC	0.059A
2700-R (*2)	Sync Strobe Light			20-31VDC	0.088A
2700-T (*2)	Sync Strobe Light			20-31VDC	0.154A
2700-Y (*2)	Sync Strobe Light			20-31VDC	0.170A
2700-Z (*2)	Sync Strobe Light			20-31VDC	0.249A
2701-E	Strobe Light			20-31VDC	0.059A
2701-G	Strobe Light			20-31VDC	0.089A
2701-J	Strobe Light			20-31VDC	0.155A
2701-K	Strobe Light			20-31VDC	0.164A
2701-L	Strobe Light			20-31VDC	0.249A
2701-M (*2)	Sync Strobe Light			20-31VDC	0.059A
2701-R (*2)	Sync Strobe Light			20-31VDC	0.088A
2701-T (*2)	Sync Strobe Light			20-31VDC	0.154A
2701-Y (*2)	Sync Strobe Light			20-31VDC	0.170A
2701-Z (*2)	Sync Strobe Light			20-31VDC	0.249A
2705-E	WP Strobe Light			20-31VDC	0.059A
2705-L	WP Strobe Light			20-31VDC	0.249A
2705-M (*2)	WP Sync Strobe Light			20-31VDC	0.059A
2705-Z (*2)	WP Sync Strobe Light			20-31VDC	0.249A
2820 (*2)	Sync Electronic Horn	20-31VDC	0.030A		
2821 (*2)	Sync Electronic Horn	20-31VDC	0.030A		
2824-M (*3)	Sync Electronic Horn w/Sync Strobe	20-31VDC	0.030A	20-31VDC	0.059A
2824-R (*3)	Sync Electronic Horn w/Sync Strobe	20-31VDC	0.030A	20-31VDC	0.088A
2824-T (*3)	Sync Electronic Horn w/Sync Strobe	20-31VDC	0.030A	20-31VDC	0.154A
2824-Y (*3)	Sync Electronic Horn w/Sync Strobe	20-31VDC	0.030A	20-31VDC	0.170A
2824-Z (*3)	Sync Electronic Horn w/Sync Strobe	20-31VDC	0.030A	20-31VDC	0.249A
2880	Electronic Signal-8T	20-31VDC	0.024-0.050A (*4)		
2881	Electronic Signal-8T	20-31VDC	0.024-0.050A (*4)		
2884-E	Electronic Signal-8T w/Strobe	20-31VDC	0.024-0.050A (*4)	20-31VDC	0.059A
2884-G	Electronic Signal-8T w/Strobe	20-31VDC	0.024-0.050A (*4)	20-31VDC	0.089A
2884-J	Electronic Signal-8T w/Strobe	20-31VDC	0.024-0.050A (*4)	20-31VDC	0.155A
2884-K	Electronic Signal-8T w/Strobe	20-31VDC	0.024-0.050A (*4)	20-31VDC	0.164A
2884-L	Electronic Signal-8T w/Strobe	20-31VDC	0.024-0.050A (*4)	20-31VDC	0.249A



Catalog Number	Description	Audible Voltage	Audible Current	Strobe Voltage	Strobe Current
2884-M (*2)	Electronic Signal-8T w/Sync Strobe	20-31VDC	0.024-0.050A (*4)	20-31VDC	0.059A
2884-R (*2)	Electronic Signal-8T w/Sync Strobe	20-31VDC	0.024-0.050A (*4)	20-31VDC	0.088A
2884-T (*2)	Electronic Signal-8T w/Sync Strobe	20-31VDC	0.024-0.050A (*4)	20-31VDC	0.154A
2884-Y (*2)	Electronic Signal-8T w/Sync Strobe	20-31VDC	0.024-0.050A (*4)	20-31VDC	0.170A
2884-Z (*2)	Electronic Signal-8T w/Sync Strobe	20-31VDC	0.024-0.050A (*4)	20-31VDC	0.249A
5330	Electronic Horn-3T	21-32VDC	0.020-0.025A (*4)		
5333	Electronic Horn-3T	21-32VDC	0.020-0.025A (*4)		
5334	Electronic Horn-3T	21-32VDC	0.020-0.025A (*4)		
5335	Electronic Horn-3T	21-32VDC	0.020-0.025A (*4)		
5340	Electronic Horn	21-32VDC	0.020A		
5343	Electronic Horn	21-32VDC	0.020A		
5344	Electronic Horn	21-32VDC	0.020A		
5345	Electronic Horn	21-32VDC	0.020A		
5350	Electronic Horn-3T	21-32VDC	0.020-0.025A (*4)		
5353	Electronic Horn-3T	21-32VDC	0.020-0.025A (*4)		
5354	Electronic Horn-3T	21-32VDC	0.020-0.025A (*4)		
5355	Electronic Horn-3T	21-32VDC	0.020-0.025A (*4)		
5360	Electronic Horn	21-32VDC	0.020A		
5363	Electronic Horn	21-32VDC	0.020A		
5364	Electronic Horn	21-32VDC	0.020A		
5365	Electronic Horn	21-32VDC	0.020A		
5370	Electronic Signal-8T	12-32VDC	0.020-0.050A (*4)		
5373	Electronic Signal-8T	12-32VDC	0.020-0.050A (*4)		
5374	Electronic Signal-8T	12-32VDC	0.020-0.050A (*4)		
5375	Electronic Signal-8T	12-32VDC	0.020-0.050A (*4)		
5380	Electronic Signal-8T	12-32VDC	0.020-0.050A (*4)		
5383	Electronic Signal-8T	12-32VDC	0.020-0.050A (*4)		
5384	Electronic Signal-8T	12-32VDC	0.020-0.050A (*4)		
5385	Electronic Signal-8T	12-32VDC	0.020-0.050A (*4)		
5405	Sync Control Unit	20-31VDC	.020A		
5406	Sync Control Unit	20-31VDC	.020A		
6120	Horn	21-30VDC	0.035A		
6140	Horn	21-30VDC	0.065A		
6220	Horn	21-30VDC	0.038A		
6223	Horn	21-30VDC	0.038A		
6224	Horn	21-30VDC	0.038A		
6225	Horn	21-30VDC	0.038A		
6230	Horn	21-30VDC	0.038A		
6234-E	Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.059A
6234-G	Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.089A
6234-J	Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.155A
6234-K	Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.164A
6234-L	Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.249A
6234-M (*2)	Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.059A
6234-R (*2)	Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.088A
6234-T (*2)	Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.154A
6234-Y (*2)	Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.170A
6234-Z (*2)	Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.249A
6235-E	WP Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.059A
6235-L	WP Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.249A
6235-M (*2)	WP Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.059A
6235-Z (*2)	WP Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.249A
6238-E	Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.059A
6238-G	Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.089A
6238-J	Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.155A
6238-K	Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.164A
6238-L	Horn w/Strobe	21-30VDC	0.038A	20-31VDC	0.249A
6238-M (*2)	Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.059A
6238-R (*2)	Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.088A
6238-T (*2)	Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.154A



Catalog Number	Description	Audible Voltage	Audible Current	Strobe Voltage	Strobe Current
6238-Y (*2)	Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.170A
6238-Z (*2)	Horn w/Sync Strobe	21-30VDC	0.038A	20-31VDC	0.249A
6240	Horn	21-30VDC	0.065A		
6243	Horn	21-30VDC	0.065A		
6244	Horn	21-30VDC	0.065A		
6245	Horn	21-30VDC	0.065A		
6250	Horn	21-30VDC	0.065A		
6254-E	Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.059A
6254-G	Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.089A
6254-J	Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.155A
6254-K	Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.164A
6254-L	Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.249A
6254-M (*2)	Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.059A
6254-R (*2)	Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.088A
6254-T (*2)	Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.154A
6254-Y (*2)	Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.170A
6254-Z (*2)	Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.249A
6255-E	WP Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.059A
6255-L	WP Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.249A
6255-M (*2)	WP Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.059A
6255-Z (*2)	WP Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.249A
6258-E	Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.059A
6258-G	Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.089A
6258-J	Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.155A
6258-K	Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.164A
6258-L	Horn w/Strobe	21-30VDC	0.065A	20-31VDC	0.249A
6258-M (*2)	Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.059A
6258-R (*2)	Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.088A
6258-T (*2)	Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.154A
6258-Y (*2)	Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.170A
6258-Z (*2)	Horn w/Sync Strobe	21-30VDC	0.065A	20-31VDC	0.249A
6300	Mini-Horn	20-31VDC	0.025A		
6301	Mini-Horn	20-31VDC	0.025A		
6304-E	Mini-Horn w/Strobe	20-31VDC	0.025A	20-31VDC	0.059A
6304-G	Mini-Horn w/Strobe	20-31VDC	0.025A	20-31VDC	0.089A
6304-J	Mini-Horn w/Strobe	20-31VDC	0.025A	20-31VDC	0.155A
6304-K	Mini-Horn w/Strobe	20-31VDC	0.025A	20-31VDC	0.164A
6304-L	Mini-Horn w/Strobe	20-31VDC	0.025A	20-31VDC	0.249A
6304-M (*2)	Mini-Horn w/Sync Strobe	20-31VDC	0.025A	20-31VDC	0.059A
6304-R (*2)	Mini-Horn w/Sync Strobe	20-31VDC	0.025A	20-31VDC	0.088A
6304-T (*2)	Mini-Horn w/Sync Strobe	20-31VDC	0.025A	20-31VDC	0.154A
6304-Y (*2)	Mini-Horn w/Sync Strobe	20-31VDC	0.025A	20-31VDC	0.170A
6304-Z (*2)	Mini-Horn w/Sync Strobe	20-31VDC	0.025A	20-31VDC	0.249A
6310	Mini-Horn-S/T	20-31VDC	0.025A		
6311	Mini-Horn-S/T	20-31VDC	0.025A		
6314-E	Mini-Horn-S/T w/Strobe	20-31VDC	0.025A	20-31VDC	0.059A
6314-G	Mini-Horn-S/T w/Strobe	20-31VDC	0.025A	20-31VDC	0.089A
6314-J	Mini-Horn-S/T w/Strobe	20-31VDC	0.025A	20-31VDC	0.155A
6314-K	Mini-Horn-S/T w/Strobe	20-31VDC	0.025A	20-31VDC	0.164A
6314-L	Mini-Horn-S/T w/Strobe	20-31VDC	0.025A	20-31VDC	0.230A
6314-M (*2)	Mini-Horn-S/T w/Sync Strobe	20-31VDC	0.025A	20-31VDC	0.059A
6314-R (*2)	Mini-Horn-S/T w/Sync Strobe	20-31VDC	0.025A	20-31VDC	0.088A
6314-T (*2)	Mini-Horn-S/T w/Sync Strobe	20-31VDC	0.025A	20-31VDC	0.154A
6314-Y (*2)	Mini-Horn-S/T w/Sync Strobe	20-31VDC	0.025A	20-31VDC	0.170A
6314-Z (*2)	Mini-Horn-S/T w/Sync Strobe	20-31VDC	0.025A	20-31VDC	0.249A
6320 (*2)	Sync Electronic Horn	20-31VDC	0.030A		
6321 (*2)	Sync Electronic Horn	20-31VDC	0.030A		
6380	Electronic Signal-8T	20-31VDC	0.024-0.050A (*4)		
6381	Electronic Signal-8T	20-31VDC	0.024-0.050A (*4)		

**Key:**

(*1) 1=10" gong, 4=4" gong, 5=chime, 6=6" gong, 8=8" gong

(*2) Sync Strobe Light or Sync Electronic Horn requires 5405 or 5406 Sync Control Module

(*3) Sync Electronic Horn and Sync Strobe Light require 5405 or 5406 Sync Control Module

(*4) See Installation Instructions for the current of the desired tone.

Cat. No. xxxx-E = Strobe Light (UL1971 15/75cd)

Cat. No. xxxx-M = Sync Strobe Light (UL1971 15/75cd)

Cat. No. xxxx-G = Strobe Light (UL1971 30/75cd)

Cat. No. xxxx-R = Sync Strobe Light (UL1971 30/75cd)

Cat. No. xxxx-J = Strobe Light (UL1971 60/75cd)

Cat. No. xxxx-T = Sync Strobe Light (UL1971 60/75cd)

Cat. No. xxxx-K = Strobe Light (UL1971 75cd)

Cat. No. xxxx-Y = Sync Strobe Light (UL1971 75cd)

Cat. No. xxxx-L = Strobe Light (UL1971 110cd)

Cat. No. xxxx-Z = Sync Strobe Light (UL1971 110cd)

7.1.2 Accessory Devices

Faraday Cat. No.	Mfg. Part Number	Description
	Faraday	
R711-1	711-1	Polarized Auxiliary Relay
MEP-100	15050	Mini-Evac Control Unit
RSE-100	15070	Remote Signal Expander
RSE-300	15073	Remote Signal Expander
15222A	15222A	Signal Expander Panel
MVP-500	15060	Mini-Voice Control Unit
MVP-501	15061	Mini-Voice Control Unit

Notes:

1. The accessory devices listed above may be wired to activate from the notification appliance circuits.
2. For specific wiring and installation information, read the instructions provided with each device.



7.2 DEVICES FOR AUXILIARY POWER OUTPUTS

The following lists compatible devices for the auxiliary power outputs.

- Door Holders
- Relays
- Accessory Devices
- Four Wire (Separately Powered) Smoke & Heat Detectors

7.2.1 Door Holders

Faraday Cat. No.	Mfg. Part Number	Description
	R.S.G. Inc.	
9552	DH-24120FC1	Door Holder
9553	DH-24120SC1	Door Holder
9554	DH-24120GC1	Door Holder
9555	DH-24120GC2	Door Holder

Notes:

1. The accessory devices listed above may be wired to the auxiliary power outputs.
2. For specific wiring and installation information, read the instructions provided with each device.

7.2.2 Relays

Faraday Cat. No.	Mfg. Part Number	Description
	Faraday LLC	
R711-1	711-1	Remote Relay Unit
	Air Products & Controls	
R712-1	MR-101/C	Remote Relay Unit
R712-2	MR-201/C	Remote Relay Unit
R712-4	MR-104/C	Remote Relay Unit
R712-8	MR-204/C	Remote Relay Unit
9273	PAM-4	E.O.L. Relay
	System Sensor	
PM6849	A77-716B	E.O.L. Relay

Notes:

1. The accessory devices listed above may be wired to the auxiliary power outputs.
2. For specific wiring and installation information, read the instructions provided with each device.

7.2.3 Accessory Devices

Faraday Cat. No.	Mfg. Part Number	Description
	Faraday LLC	
RDC-1	12506	Remote Annunciator Unit
SRU-1	12507	Serial Relay Unit
SAU-1	12509	Serial Annunciator Unit
	System Sensor	
9159	M500CH	Control Module

Notes:

1. The accessory devices listed above may be wired to the auxiliary power outputs.
2. For specific wiring and installation information, read the instructions provided with each device.



7.2.4 Four-Wire (Separately Powered) Smoke and Heat Detectors

Faraday Detector w/Base	Mfg. Detector w/Base	Maximum Standby Current	Maximum Alarm Current	Notes
	Air Products & Controls			
9269	RW-DC-N	0.081m	115mA	Must use EOL Relay
9270	RW-DC-P	0.110m	115mA	Must use EOL Relay
	Apollo Fire Detectors			
9260 w/9266	55000-350 w/45681-227	0.130m	100mA	Must use EOL Relay
9261 w/9266	55000-250 w/45681-227	0.081m	100mA	Must use EOL Relay
9264 w/9266	55000-153 w/45681-227	0.086m	100mA	Must use EOL Relay
9274 w/9266	55000-152 w/45681-227	0.096m	100mA	Must use EOL Relay
9259 w/9266	55000-150 w/45681-227	0.086m	100mA	Must use EOL Relay
9221 w/9266	55000-151 w/45681-227	0.086m	100mA	Must use EOL Relay
9222 w/9266	55000-380 w/45681-227	0.205m	100mA	Must use EOL Relay
	System Sensor			
9337	1112/24	0.050mA	25mA	Must use EOL Relay
9338	2112/24	0.050mA	25mA	Must use EOL Relay
9339	2112/24T	0.050mA	25mA	Must use EOL Relay
9340	2112/24TSRB	15mA	45mA	Must use EOL Relay
9358 w/9362	1451 w/B402B	0.120mA	36mA	Must use EOL Relay
9359 w/9362	2451 w/B402B	0.120mA	36mA	Must use EOL Relay
9360 w/9362	2451TH w/B402B	0.120mA	36mA	Must use EOL Relay
9447 w/9362	5451 w/B402B	0.120mA	36mA	Must use EOL Relay
9421 w/9362	4451HT w/B402B	0.120mA	36mA	Must use EOL Relay
9183 w/9186	2151 w/B112LP	0.120mA	36mA	Must use EOL Relay
9184 w/9186	1151 w/B112LP	0.120mA	36mA	Must use EOL Relay

Notes:

1. For specific wiring and installation information, read the instructions provided with each device.
2. Each 9273 EOL Relay requires 15 mA. standby current.



8. TROUBLESHOOTING

This section describes the LED states and provides possible trouble conditions of the 15073.

8.1 LED INDICATORS

Light-emitting diodes (LEDs) indicate fault and normal conditions. The seven LEDs indicate a fault condition in one of the circuits (either outputs 1 through 4, auxiliary power, ground fault, or battery). A fault condition in the LEDs corresponding circuit will turn on the LED (labeled on the board). The POWER LED will normally be on and turn off to indicate an AC fault condition. See Figure 2-2 for locations of LEDs. Their functions are as follows:

DESIGNATION	MARKING	COLOR	DESCRIPTION
DS1	OUTPUT1	Yellow	NAC 1 trouble LED.
DS2	OUTPUT2	Yellow	NAC 2 trouble LED.
DS3	OUTPUT3	Yellow	NAC 3 trouble LED.
DS4	OUTPUT4	Yellow	NAC 4 trouble LED.
DS5	AUX. P.S.	Yellow	Auxiliary power output trouble LED
DS6	GRND	Yellow	Ground fault LED
DS7	BATTERY	Yellow	Battery trouble LED
DS8	POWER	Green	AC Power normal LED

8.2 IMPROPER OPERATION

If there is improper operation of the activation of the outputs, check for the following:

Was the reset switch SW2 pressed after changing the DIP switch settings?

Are the DIP switch settings correct for the application?
(See Section 5.1)

Are the jumper settings correct for the application?
(See Section 5.2)

Are the inputs activating correctly?

Are the correct type of notification appliances connected?
(Conventional or Sync Strobes/Horns)



8.3 TROUBLE CONDITIONS

CAUTION: Troubleshooting is to be done only by qualified personnel who have been trained to repair and test this fire alarm accessory.

Trouble conditions are sent to the fire alarm control unit from the trouble relay or associated input trouble relay.

DESCRIPTION	PROBABLE CAUSE
<i>POWER</i> LED (DS8) not lit.	No AC input power. Low AC input power (Less than 90VAC). Notes: 1. DIP Switch SW1 switches 9 & 10 set the delay for reporting AC power faults from 0 to 24 hours. 2. The green <i>POWER</i> LED turns off as soon as low AC or loss of AC occurs (does not wait for delay). 3. The trouble restores within 1 minute of the AC voltage restoring to normal level.
<i>BATTERY</i> LED (DS7) lit.	Low battery input power (Less than 21.4VDC). No battery input power. Shorted battery input. Open polyswitch F2 or F3 (Disconnect battery and reconnect to reset). Note: The battery input is checked about once a minute for troubles and restorals.
<i>GRND</i> LED (DS6) lit.	One or more external field connections shorted to earth ground (Less than 40K ohms). Note: When the 15073 power is referenced to the control unit power; the ground detection circuit may be disabled with jumper J9.
<i>AUX. P.S.</i> LED (DS5) lit.	Overcurrent condition on the auxiliary power output. (Trip with greater than 3.7Amps.). Note: The circuit automatically tries to restore about once a minute.
<i>OUTPUT1</i> LED (DS1) lit or <i>OUTPUT2</i> LED (DS2) lit or <i>OUTPUT3</i> LED (DS3) lit or <i>OUTPUT4</i> LED (DS4) lit.	Associated NAC is open (Greater than 49K ohms). Associated NAC is shorted (Less than 18K ohms). Associated NAC has an overcurrent condition (Trip with greater than 3.7Amps.). Note: The circuit automatically tries to restore about once a minute.



9. GLOSSARY

Alarm Signal. A signal indicating an emergency requiring immediate action, such as an alarm for fire from a manual station, a waterflow alarm, or an automatic smoke detector.

Alarm System. A combination of compatible initiating devices, control units, and notification appliances designed and installed to produce an alarm signal in the event of a fire.

Audible Signal. An audible signal is a sound made by one or more audible notification appliances, such as bells or horns, in response to the operation of an initiating device.

Authority Having Jurisdiction (AHJ). The organization, office, or individual responsible for approving equipment, installation or procedure.

Class A Circuit. An initiating device or notification appliance circuit within which all components remain fully functional, even though a single open or ground exists in the circuit.

Class B Circuit. An initiating device or notification appliance circuit within which some or all components may be disabled with a single open or ground exists in the circuit.

End Of Line (EOL). A device used to terminate a supervised circuit.

General Alarm. A term usually applied to the simultaneous operation of all the notification appliances on a system.

Ground Fault. A trouble condition in which a low resistance has been detected between the system wiring and conduit ground.

Initiating Device Circuit (IDC). A circuit to which initiating devices are connected.

Labeled. Equipment or materials to which have been attached a label, symbol, or other identifying mark of an organization acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of the production of such labeled equipment or materials. And by whose labeling the manufacturer indicates compliance with appropriate standards or performance in a specified manner.

Listed. Equipment or materials included in a list published by an organization acceptable to the authority having jurisdiction and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials. And whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

NEC. National Electrical Code also published as NFPA standard 70.

Notification Appliance. An electrically operated appliance used to indicate the system status such as a bell, horn, strobe light or speaker.

Notification Appliance Circuit (NAC). A circuit to which notification appliances are connected.

Power Supply. That portion of the fire alarm control unit, which provides the power needed to operate all control unit modules, as well as that, needed to operate all electrically powered initiating devices and all notification appliances.

Trouble Signal. An audible signal indicating trouble of any nature, such as a circuit break or ground, occurring in the device or wiring associated with a fire alarm signal.

Zone. A designated area of a building. Commonly, zone, is interchanged with initiating device circuit.



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