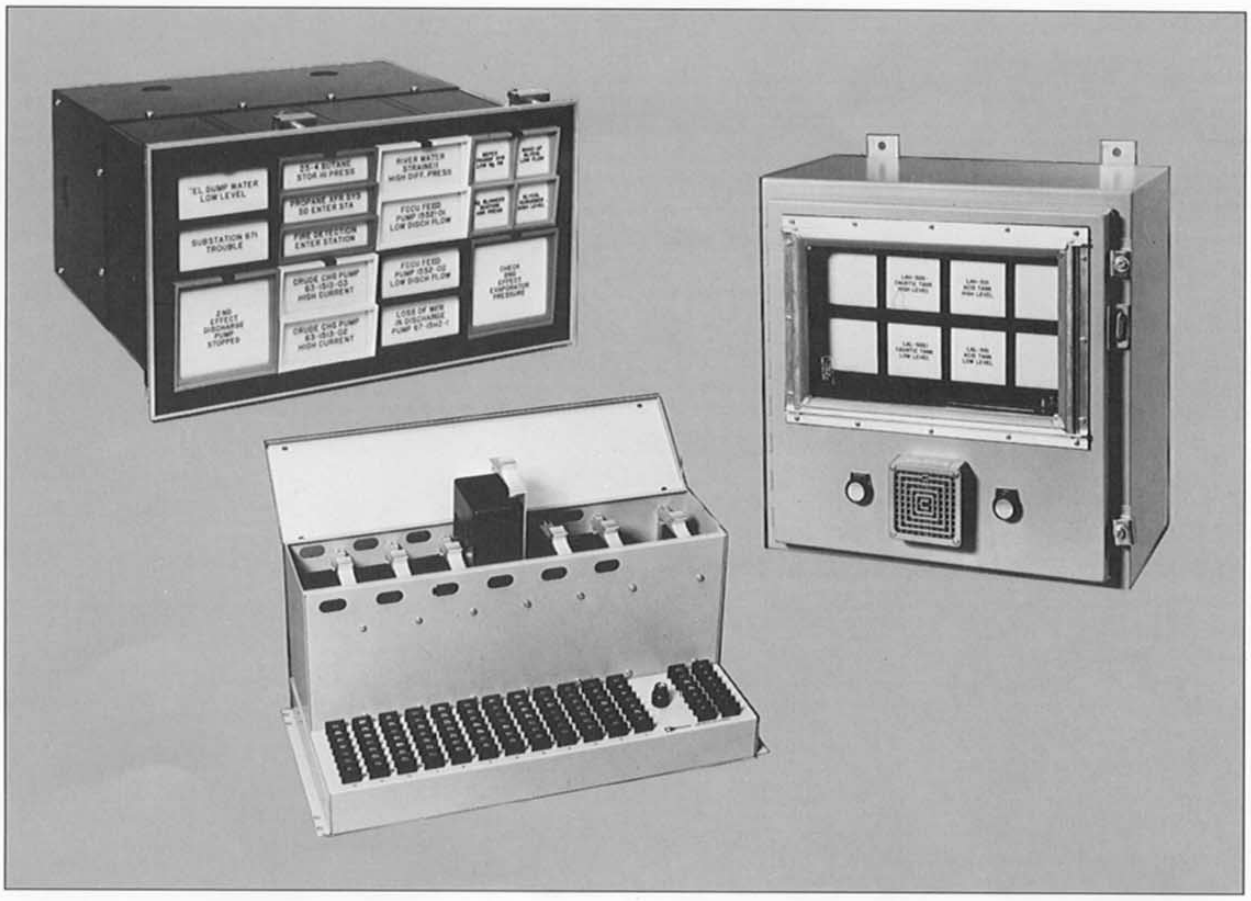
Instructions
and
Operating Manual

SERIES X3 AND X9

RELAY
ANNUNCIATOR SYSTEMS



RONAN

GENERAL SPECIFICATIONS

AMBIENT TEMPERATURE

The outside ambient air temperature surrounding an annunciator in normal operation may vary from −40° F. to 120° F. maximum. Internal temperature of the annunciator must be kept below 150° F. In large annunciator cabinets where, during start-up periods there are large numbers of off-normal points, provision should be made for forced cooling of the cabinet. Fans can be provided as required, mounted in the rear cover, when high internal temperatures are anticipated.

HUMIDITY

The annunciator should be protected from excessive moisture and corrosive atmospheres. Special enclosures are available; i.e., NEMA 1, 4, 12, etc.

The printed circuit card is furnished with a fungus proof varnish coating on all exposed circuitry where required. Epoxy coatings are also available.

The dust covered General Purpose Relays are adequate for most conditions of ambient humidity. When a sealed environment is necessary, Hermetically Sealed Relays are available.

PRESSURE

Normal atmospheric pressure variations will not affect the annunciator.

AMBIENT LIGHTING

The standard Modularm window is illuminated with 12 watts, Dualarm and Trialarm window is illuminated with 6 watts and Quadalarm is illuminated by 3 watts. They should not be used in light levels over 85 foot-candles. Colored lamps consisting of clear lamps with colored filters are not recommended for use in ambient light levels over 50 foot-candles.

POSITION

The annunciator will operate in any position. Transient shock loads of 5G's will not damage the annunciator. In normal operation the relay will operate satisfactorily under 3G's shock loads. In vibratory environments, special consideration should be given to shortened life of light bulbs due to filament construction. Special shock mounting enclosures are available.

ANNUNCIATOR EQUIPMENT ENGINEERING DATA

UNIT	VOLTAGE	NOMINAL POWER	CONTACT CAPACITY	SOUND
SERIES X52 5PDT	115 VAC	1.2 VA	3 AMPS	
SERIES X23 4PDT	125 VDC	.9 WATTS	.5 AMPS	
ALARM RELAYS*	24 VAC	1.2 VA	3 AMPS	
	24 VDC	.9 WATTS	3 AMPS	
AUXILIARY RELAYS	115 VAC	2 VA	10 AMPS	
SERIES KRP & KR7272	125 VDC	3 WATTS	.75 AMPS	
	24 VAC	2 VA	10 AMPS	
	24 VDC	3 WATTS	10 AMPS	
AUXILIARY RELAYS	115 VAC	5.5 VA	30 AMPS	
MERCURY TYPE	24 VAC	5.5 VA	30 AMPS	
SERIES MR	125 VDC	5.0 WATTS	25 AMPS	
	24 VDC	6.5 WATTS	30 AMPS	
FLASHER RATINGS	115 VAC	5VA	5 AMPS	
ALL X3-5000 SERIES	24 VAC	5VA	10 AMPS	
	125 VDC	5 WATTS	1 AMPS**	
	24 VDC	5 WATTS	5 AMPS**	
HORN 350N	115 VAC	20 VA		100 DB AT 10′
450N	125 VDC	12 WATTS		97 DB AT 10′
350N	24 VAC	20 VA		100 DB AT 10′
450N	24 VDC	6 WATTS		97 DB AT 10′
PUSHBUTTONS	115 VAC		10 AMPS	
LARGE OILTIGHT	24 VAC		10 AMPS	
202B	125 VDC		2 AMPS***	
203B	24 VDC		5 AMPS	
PUSHBUTTONS	115 VAC		10 AMPS	
SERIES X13	24 VAC		10 AMPS	
MERCURY TYPE	125 VDC		5 AMPS	
	24 VDC		10 AMPS	

*For number of relays per alarm point refer to appropriate alarm schematic drawing

**Use auxiliary flasher relay series MR for all systems requiring greater loads than the flasher contact loading.

***Recommend the use of Series X13 Mercury Pushbuttons for this voltage

Note — All DC relay contact capacities listed are for resistive loads except the series MR relays.

POWER SUPPLY

The standard power supply inputs are 115 Volt AC, 60 Cycle and 125 Volt DC. Power supply fluctuations of 10% will operate the annunciator satisfactorily. Special voltages and frequencies are available on request.

POWER CONSUMPTION

In determining the maximum load per system, consider the following:

1. Number of relays energized x coil wattage.
2. Total number of lamps x lamp wattage.
3. Flasher wattage.
4. Horn wattage.

For design purposes the maximum load occurs during lamp test when all alarm points are in the normal condition. Also for design purposes the normal load typically has 75% of all alarm points in the normal condition and 25% in the acknowledged alarm condition.

Please note that in each alarm system application the normal operating load may vary.

LOCK-IN FEATURE

The "Lock-in" feature is provided to prevent momentary alarms from returning to normal without first being acknowledged by the operator. In systems supplied with the choice of "Lock-in" or "Non-lock" it is possible to permit momentary alarms to automatically reset themselves when using the "Non-lock" feature.

AUXILIARY CONTACTS

Isolated auxiliary contacts are provided with most alarm sequences. The contacts are especially useful in shutdown and interlock circuits in various types of electrical control circuits. Since the contact is part of the alarm sequence the operator has full knowledge of any malfunction and can take the proper corrective action before acknowledging or resetting the alarm. It is important to note that with "Manual Reset" the alarm can be acknowledged; however, reset can be delayed as long as required, until manually activated, to maintain the auxiliary contact in the alarm position.

ALARM RELAY SPECIFICATIONS

SYSTEM DESIGN VOLTAGES

Nominal Voltage
115VAC — 60 Cycles
Operating Range
105VAC to 125VAC

Nominal Voltage
125VDC
Operating Range
105VDC to 145VDC

Nominal Voltage
24VAC
Operating Range
20.4VAC to 28VAC

Nominal Voltage
24VDC
Operating Range
18VDC to 30VDC

COIL RESISTANCE VALUES

24VAC - 200 OHMS
115VAC - 3900 OHMS
24VDC - 600 OHMS
125DC - 17500 OHMS

NOMINAL TIMING VALUES

Pull-in - 13 milliseconds
Dropout - 10 milliseconds

TEMPERATURE RISE

At nominal voltage - 40% C.
At 25% overvoltage - 55%C.

POWER CONSUMPTION

AC Relays - 1.2VA nominal
DC Relays - 0.9 watts nominal

RELAY CONTACTS

4 PDT for alarm relays X23 series
5 PDT for alarm relays X52 series
Material - fine silver with gold flash
Rating - 3 amps at 30VDC or 115VAC resistive

INSULATING MATERIAL

Molded glass reinforced alkyd
Resistance - 1500 megohms minimum

EXPECTED LIFE

Mechanical - 50 million operations
Electrical - 100,000 operations at full rated load

BREAKDOWN VOLTAGE

General Purpose:
1250 volts RMS 60 cycles between contacts and all other elements

Hermetically Sealed:
750 volts RMS 60 cycles between contacts and all other elements

MAXIMUM POWER REQUIREMENT PER ALARM POINT IN WATTS

CABINET	"A" SEQUENCE		MANUAL RESET SEQUENCE FIRST ALERT SEQUENCE RINGBACK SEQUENCE		FIRST ALERT MANUAL RESET SEQUENCE	
	24VAC/24VDC	115VAC/125VDC	24VAC/24VDC	115VAC/125VDC	24VAC/24VDC	115VAC/125VDC
SERIES X3-1000	9	14	10	15	11	16
SERIES X3-2000	9	8	10	9	11	10
SERIES X3-3000	9	8	NOT APPLICABLE			
SERIES X3-4000	5.5	5				

GENERAL PURPOSE
4PDT

HERMETICALLY SEALED
4PDT

GENERAL PURPOSE
5PDT

HERMETICALLY SEALED
5PDT

INSTALLATION INSTRUCTIONS

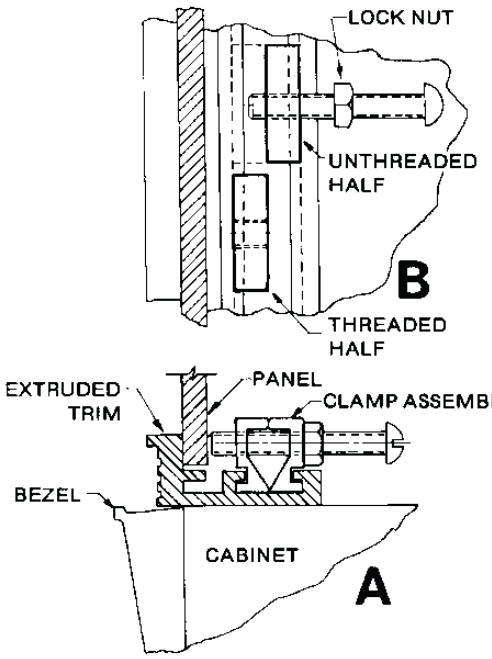
FOR ALL PANEL MOUNTED RONAN SYSTEMS
SERIES X3-1000, X3-2000, X3-3000, X3-4000,
X3LR-1000, X3LR-2000, X3LR-3000, X3LR-4000
The annunciator is shipped with all of the alarm plug-in modules and flasher units installed in the cabinet.

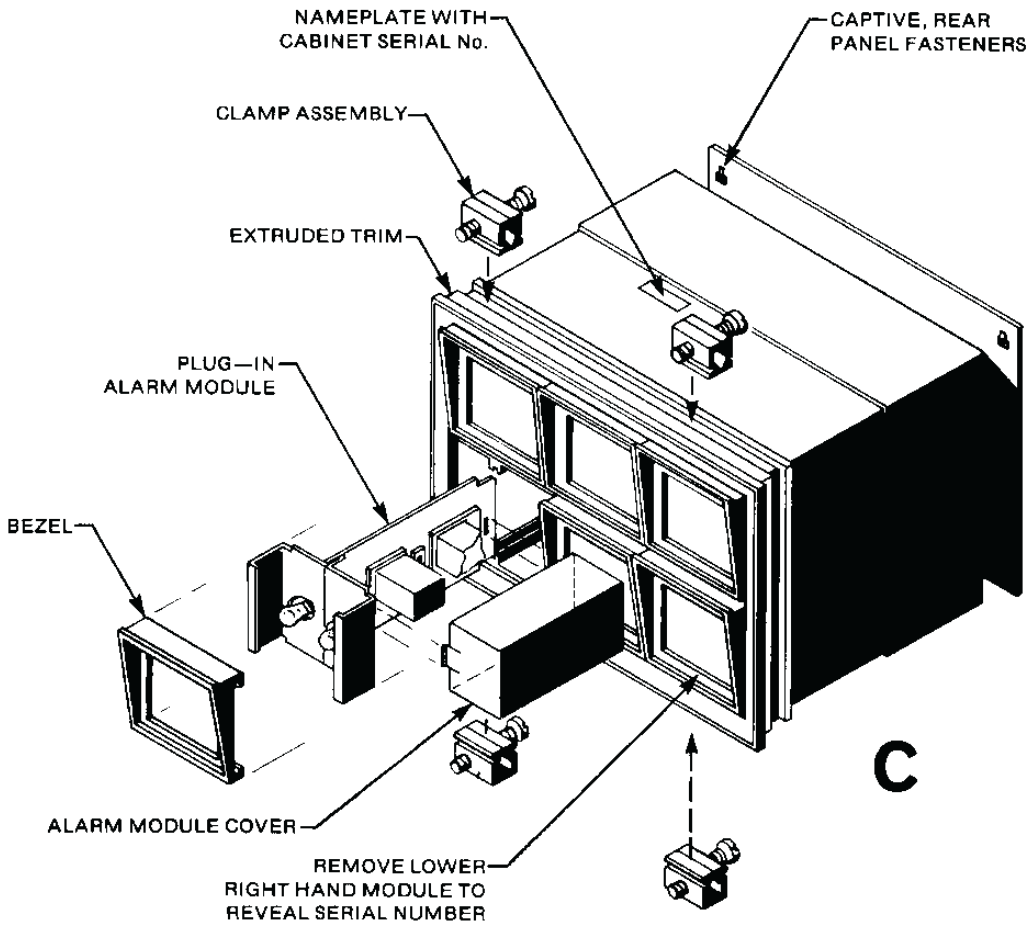
External auxiliary horn relays, pushbuttons, horns, bells and remote relay sockets are packed separately.

1. Install the alarm cabinet from the front of the panel. Orient the cabinet in the cutout so that the cabinet rests on the front extruded trim, see detail "A". Make sure that the front trim is held firmly against the panel both top and bottom.

   From the rear side of the panel, insert the two halves of the clamp assembly (one-half threaded and the other half unthreaded) in the groove of the front trim, see detail "C".

3. Slide the clamps together until holes align, see detail "B".
4. Insert the jack screw and tighten to secure the cabinet in the panel. Install all the clamps the same way and be sure to tighten evenly.
5. Finally tighten up the lock nuts on each jack screw.





TEST PROCEDURES

SYSTEM DESIGN VOLTAGES

Nominal Voltage – 115VAC – 60 Cycles
Operating Range – 105VAC to 125VAC

Nominal Voltage – 125VDC
Operating Range – 105VDC to 145VDC

Nominal Voltage – 24VAC
Operating Range – 20.4VAC to 28VAC

Nominal Voltage – 24VDC
Operating Range – 18VDC to 30VDC

Before proceeding with testing of an alarm system in a new installation, we recommend the complete check-out of all the external wiring for correctness with respect to the general electrical drawing and alarm module schematic drawings supplied with each unit being installed.

CAUTION

On all external equipment used with the alarm system, it is important to verify that each component meets the standards required for the area and environment required by the National Electrical Code governing the installation of this equipment. It is also important to verify the electrical classification of the alarm system.

The wiring inspection falls into the following areas:

ALARM INPUTS

Each active alarm input must be wired to the customer's sensing device to provide an opening or closing contact on alarm condition. The terminals on the alarm system for each alarm input are marked "H" and "FC". The "H" terminal in standard alarm systems is the common system voltage above ground in the case of AC systems and the + voltage in the case of DC systems. Each alarm input module is provided with a separate "H" terminal. However, it is common practice to run only one "H" wire to many sensing devices to reduce the number of wires required. The return wire from the field sensing device is wired to the "FC" terminal on each respective alarm module. Since the alarm system provides the power to sensing devices, it is important to verify that no other voltage source appears on either the "H" or "FC" terminals. Note: On special alarm systems, the alarm inputs can be supplied to handle foreign voltage inputs. If the system under test has this feature, verify by reviewing the electrical schematics, particularly the alarm module schematic. On standard systems, the "H" and "N" wiring need not be connected to ground. In general, all relay systems operate ungrounded and will operate with either "H" or "N" grounded. However, we recommend that if a ground is used, the "N" should be grounded to conform with our general practices.

When the complete system is in operation, the field sensing device contact that opens with an alarm condition is termed a "normally closed" alarm input and conversely, the sensing contact that closes with an alarm condition is termed a "normally open" alarm input.

PUSHBUTTON WIRING

Referring to the electrical drawing, it is most important to verify the correctness of wiring to all of the pushbuttons including the type of contacts used, such as "normally open" or "closed", as detailed on the alarm module schematic. For example, the acknowledge pushbutton is wired between "H" and "S" on the master terminals with "normally closed" contacts on the pushbutton. If by mistake the wires are wired to a set of "normally open" contacts on the pushbutton, the alarm will not function properly. To illustrate this failure, the horn will not sound, and the alarm lights will not flash. With any alarm inputs on multiple alarm cabinets using integral pushbuttons on one cabinet only, particular care must be taken to verify the wiring of pushbuttons using "normally closed" contacts due to daisy chain type wiring used. On systems using customer-supplied pushbuttons, it is important to verify the current load on each pushbutton contact, particularly on D.C. systems where proper consideration must be taken in regard to the inrush value of the load.

MR1 RELAYS

Verify the mounting of MR1 relays to see that they are mounted vertically to ensure proper operation of these mercury plunger type relays.

POWER SUPPLIES

If power supplies are used, verify the polarity of wiring to the alarm system master terminals, and in larger systems, particularly when using lower voltages, check for the correct wire size on the power input wiring.

HORN AND BELL WIRING

In general, on the smaller systems, the audible device, such as the horn or bell, can be handled directly by the alarm system by wiring directly to the master terminals as indicated on the schematic drawings. On systems using other devices or multiple horns, verify the contact loading of the alarm module relay contact before proceeding with test. If information is provided to the factory, a horn relay will be provided with the correct contact rating. It is also recommended on multiple alarm cabinet systems if individual power is preferred on each alarm cabinet with a common horn for the system, a horn relay should be used with each cabinet to maintain electrical isolation.

TO TEST ALL LAMPS

Depress the lamp test pushbutton. Activating the test pushbutton does not affect the state of any relay on the Alarm Module.

TEST PROCEDURES (CONT.)

TO TEST EACH ALARM POINT

Most alarm plug-in modules are equipped for operation with either normally open or normally closed field contacts. To incorporate this feature, Ronan uses the Reversible "A" Relay design to accomplish this option.

If the field contact device cannot be easily switched for testing purpose, remove the field alarm point wiring and use the following procedure:

A. **Reversible "A" Relay**
The alarm relay socket has two positions in which to insert the relay "normally open" (N.O.) or "normally closed" (N.C.) position. When using "normally open" field contacts, the alarm relay is placed in the "normally open" position. Jumper the appropriate "H" and "FC" terminal to create an alarm condition. When using "normally closed" field contacts, the alarm relay is placed in the "normally closed" position. Jumper the appropriate "H" and "FC" terminal to create the normal condition. Then remove the jumper to create an alarm condition.

B. With the alarm condition created by "A" the alarm system will follow the sequence as described in the "SEQUENCE CHART" shown on the general electrical wiring drawing operating the silence and reset pushbutton as described.

C. In standard sequences with the field contact still in the alarm condition, operating the silence pushbutton will turn off the horn and flasher which in turn will change the flashing light to a steady condition.

D. With the alarm contact returned to normal all "A" sequence alarm modules will return to the normal condition automatically. On "Reset" sequence modules, the reset pushbutton will have to be depressed to return the alarm point to the normal condition. The "Ring-back" sequence modules will enter into the normal alarm condition and will also require resetting with the reset pushbutton.

E. Alarm modules provided with selective "Lock-in" feature will function as follows:
With the switch in the "Lock" position any momentary alarm will be retained by the system and will require acknowledgement by operator to return the point to the normal condition. All momentary alarms will be automatically reset without the attention of the operator when the switch is set in the "Non-lock" position.

F. In intermixed systems refer to the sequence chart for the module being tested since the different type modules may require the operation of a reset pushbutton to function properly.

G. Intermixed window sizes Series X3-2000 cabinets can accept any Series 1000 or 2000 in any alarm chassis position using any of the five standard alarm sequences.

H. Series X3-3000 and X3-4000 can only use "A" Sequence alarm modules; X3-1001, X3-2001, X3-3001 and X3-4001 as required. Installation of other standard alarm sequence modules in the Series X3-1000, X3-2000, X3-3000 or X3-4000 will not operate correctly, however no electrical damage will result.

LOW VOLTAGE ALARM LIGHT SYSTEMS

On systems using the low voltage alarm indicators check the supply voltage, and if adjustable powerstats are used, set the voltage to ensure sufficient illumination and still maintain long life on the indicator lamps.

HORN VOLUME ADJUSTMENT

All 350, 450 and 8140 Series horns are provided with volume adjustment and should be set in the field to operate above the ambient noise level.

TROUBLE SHOOTING

All alarm system components including the alarm modules, flashers, and alarm chassis are individually inspected and tested as the last step in the manufacturing cycle. In addition, each alarm system, before shipment, is given a complete functional test, checking each alarm point for proper sequence operation and verifying that the operation of the auxiliary contacts is correct for both normal and alarm conditions. Faulty operation of the alarm system can usually be corrected by using the following procedure.

IMPROPER CONNECTIONS TO EXTERNAL EQUIPMENT

This is by far the most common cause of annunciator malfunction and can be determined as follows:

A. Check the individual alarm relay voltage and lamp voltage for correctness. If the system fuse has blown, check polarity and grounding circuits if used.

B. Isolate all external devices except the input power connections.

C. Unseat all alarm modules except the No. 1 alarm module. At this point, the only items plugged into the alarm chassis are one alarm module and the flasher. Jumper the pushbutton input terminals on the master module to simulate the correct connections for normal operation of the alarm system. To eliminate a problem due to a faulty flasher, check this item as detailed in the paragraph outlining the flasher checkout procedure.

TROUBLE SHOOTING (CONT.)

D. Connect a simulating set of devices to replace the field contacts as shown on the general electrical or wiring diagrams. This must be first on the No. 1 alarm module input.
E. Using the simulating field contacts follow the "TEST PROCEDURE" instructions to check the sequence operation of the annunciator.
F. If the first alarm does not operate correctly, the fault will lie in one of the following areas:
   1. Faulty alarm module
   2. Chassis wiring failure such as a short or cold solder junction
G. Remove the No. 1 alarm module from the chassis and insert the No. 2 alarm module into the No. 1 chassis position. If the No. 2 alarm module operates correctly, this will indicate that the No. 1 alarm module is faulty. Should the No. 2 alarm module not function in the No. 1 position, the fault lies in the chassis wiring.
H. If the failure results in the chassis wiring, we recommend removal of each alarm input terminal module plate for inspection for foreign objects causing a shorting condition or any damaged wiring. Also check for broken connections to printed circuit board connectors. Finally, if the above procedure does not provide the solution to the fault, we recommend a thorough review of all solder joints.
J. Referring back to paragraph F, should the No. 1 alarm module function correctly, continue with the same procedure for checking all alarm modules by seating each module and using the simulating field input switch at each alarm point. After this testing, should all alarm modules function correctly, the whole alarm chassis and alarm modules have proven out to be correct. At this point, the error is now confined to the external wiring, possible pushbuttons or external equipment miswiring, or a short in the field wiring.
K. To avoid further damage to new alarm modules, do not place another module into an alarm position that produced circuit board trace failures. A detailed review of the trace failure will determine the failure, since it is possible to track down the input signals to the module. In most cases, the damage is due to shorts on auxiliary contact leads, high voltage on the "FC" input terminals, miswiring the horn circuit so as "N" is directly wired to the "A" terminal of the master terminals. However, this failure is not detected until the first alarm occurs in an operating system.

AUDIBLE SIGNAL NOT OPERATING

Remove the audible device from the system and connect to an external AC or DC power source of the same voltage level. If the horn or bell operates properly, check the alarm system for loose wiring connections, miswiring or defective contacts on auxiliary horn relays, etc.

CHECK ALARM PLUG-IN MODULES

A faulty alarm plug-in module may produce any one of the following conditions:

A. Audible device will not sound in an alarming condition or cannot be silenced by operating the silence pushbutton.
B. Alarm lamps will not light in the alarm or test condition.
C. Alarm lamps will not flash in the alarming condition.
D. Alarm lamps will continue to flash after the system has been acknowledged and the horn will continue to sound.
E. In "First Alert" Sequences the subsequent alarm condition will operate "flashing" instead of "steady" if the "ME" bus wiring is not connected.
F. In the "Manual Reset" Sequence the alarm light misoperates by resetting automatically, or fails to reset with the operation of the reset pushbutton.
G. Since the auxiliary contacts are isolated they can be checked with a simple low voltage buzzer or meter for continuity.

TO TEST AN ALARM PLUG-IN MODULE

A. Remove the suspected plug-in alarm module and transfer it to another position of the cabinet where a similar alarm module has functioned correctly.
B. If the plug-in alarm module produces the same problem in the new position, the module is faulty.
C. If the plug-in alarm module operates properly in the new position the fault lies in chassis wiring.
D. Check the alarm module relays using a spare alarm relay to replace each relay one at a time until the module is corrected.
E. Check the printed circuit board traces for failures caused by shorts on the horn or remote alarm light circuits.

CHECK FLASHER

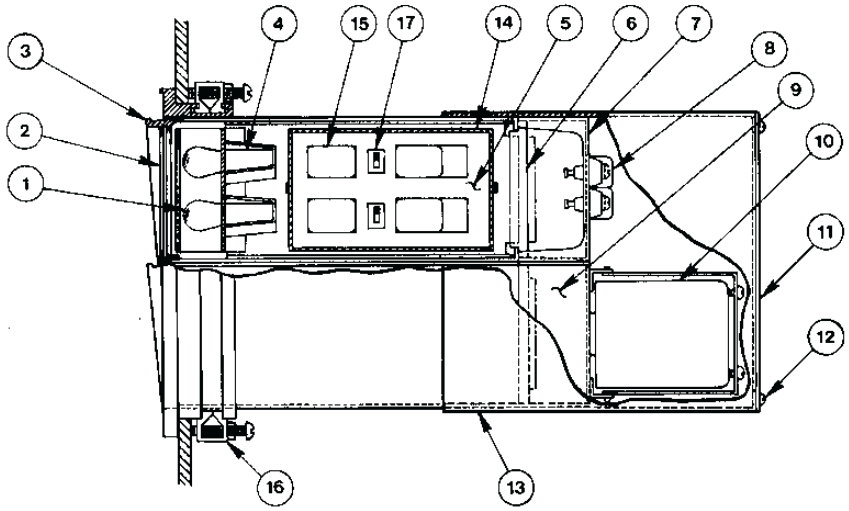
A defective flasher will either leave the lamps lit continuously or will not illuminate any lamps during an alarm condition. Since the horn is on the same circuit as the flasher it also should be sounding as the flasher is operating and will verify that power is being supplied to the flasher. Using the system's power as a source a flasher can be checked independently with the external wiring to the pins of the removed flasher.

IN THE EVENT THAT THE TROUBLE CANNOT BE LOCATED, PLEASE CONTACT THE FACTORY OR THE LOCAL REPRESENTATIVE IN YOUR AREA FOR ASSISTANCE.

UNDER NO CIRCUMSTANCES SHOULD THE INTERNAL WIRING OF THE CHASSIS BE TAMPERED WITH PRIOR TO RECEIVING APPROVAL FROM THE FACTORY IN ORDER TO AVOID LOSING THE EQUIPMENT GUARANTEE.

PARTS LIST

MODELS X3-1000, X3-2000, X3-3000, X3-4000
X3LR-1000, X3LR-2000, X3LR-3000, X3LR-4000



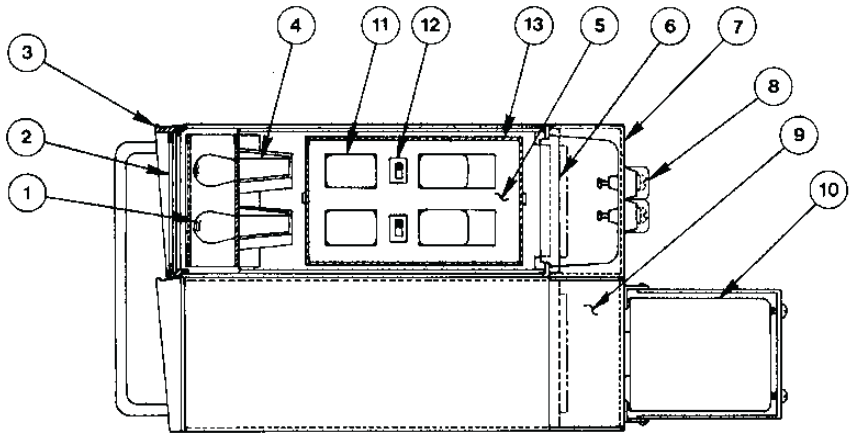
REAR COVERS OMITTED AND FLASHERS MOUNTED REMOTELY OR PLUG-IN TYPE ON MODELS X3LR SERIES.

NOTE

1. See Spare Parts List for part numbers.
2. Please specify the following when ordering replacement parts:
   - A. Cabinet Serial Number
   - B. System Voltage – AC or DC
   - C. Electrical Classification: General Purpose Area or Class I, Division 2 Area

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	ALARM LAMP	9	MASTER MODULE
2	NAMEPLATE – SPECIFY COLOR	10	FLASHER
3	BEZEL – SPECIFY COLOR	11	REAR COVER PLATE
4	LAMP SOCKET	12	REAR COVER FASTENERS
5	ALARM MODULE	13	REAR HOUSING ENCLOSURE
6	PRINTED CIRCUIT CONNECTOR	14	ALARM MODULE COVER
7	REAR TERMINAL PLATE	15	ALARM RELAY
8	ALARM POINT TERMINALS	16	PANEL CLAMP ASSEMBLY– PART NO. X2A86
		17	LOCK-NONLOCK SWITCH

MODELS X3RR-1000, X3RR-2000, X3RR-3000, X3RR-4000



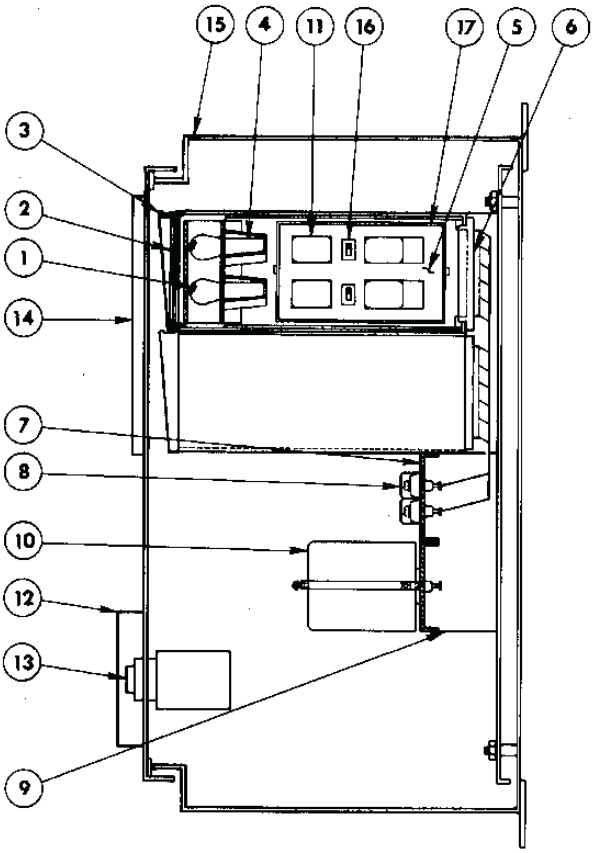
NOTE

1. See Spare Parts List for part numbers.
2. Please specify the following when ordering replacement parts:
   - A. Cabinet Serial Number
   - B. System Voltage – AC or DC
   - C. Electrical Classification: General Purpose Area or Class I, Division 2 Area

ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	ALARM LAMP	7	REAR TERMINAL PLATE
2	NAMEPLATE – SPECIFY COLOR	8	ALARM POINT TERMINALS
3	BEZEL – SPECIFY COLOR	9	MASTER MODULE
4	LAMP SOCKET	10	FLASHER
5	ALARM MODULE	11	ALARM RELAY
6	PRINTED CIRCUIT CONNECTOR	12	LOCK-NONLOCK SWITCH
		13	ALARM MODULE COVER

PARTS LIST (CONT.)

MODELS X3SM-1000, X3SM-2000, X3SM-3000, X3SM-4000

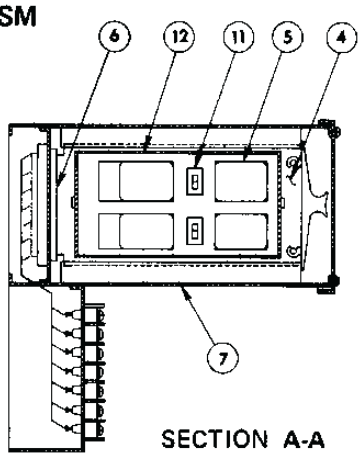


ITEM	DESCRIPTION
1	ALARM LAMP
2	NAMEPLATE – SPECIFY COLOR
3	BEZEL – SPECIFY COLOR
4	LAMP SOCKET
5	ALARM MODULE
6	PRINTED CIRCUIT CONNECTOR
7	TERMINAL PLATE
8	ALARM POINT TERMINALS
9	MASTER MODULE
10	FLASHER
11	ALARM RELAY
12	HORN
13	PUSHBUTTON
14	VIEWING WINDOW
15	ENCLOSURE
16	LOCK-NONLOCK SWITCH
17	ALARM MODULE COVER

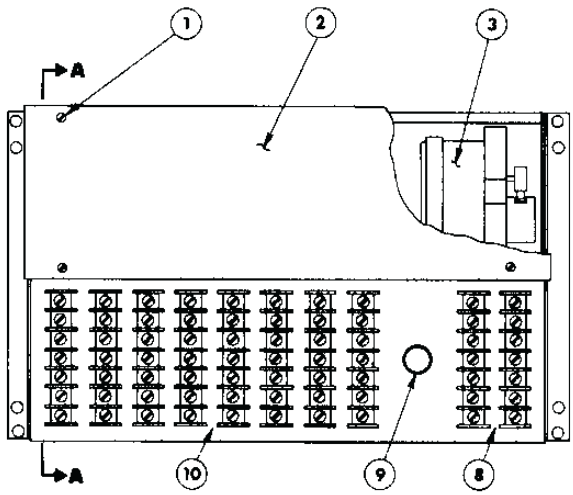
NOTE

1. See Spare Parts List for part numbers.
2. Please specify the following when ordering replacement parts:
   - A. Cabinet Serial Number
   - B. System Voltage – AC or DC
   - C. Electrical Classification: General Purpose Area or Class I, Division 2 Area

MODEL X9SM



SECTION A-A



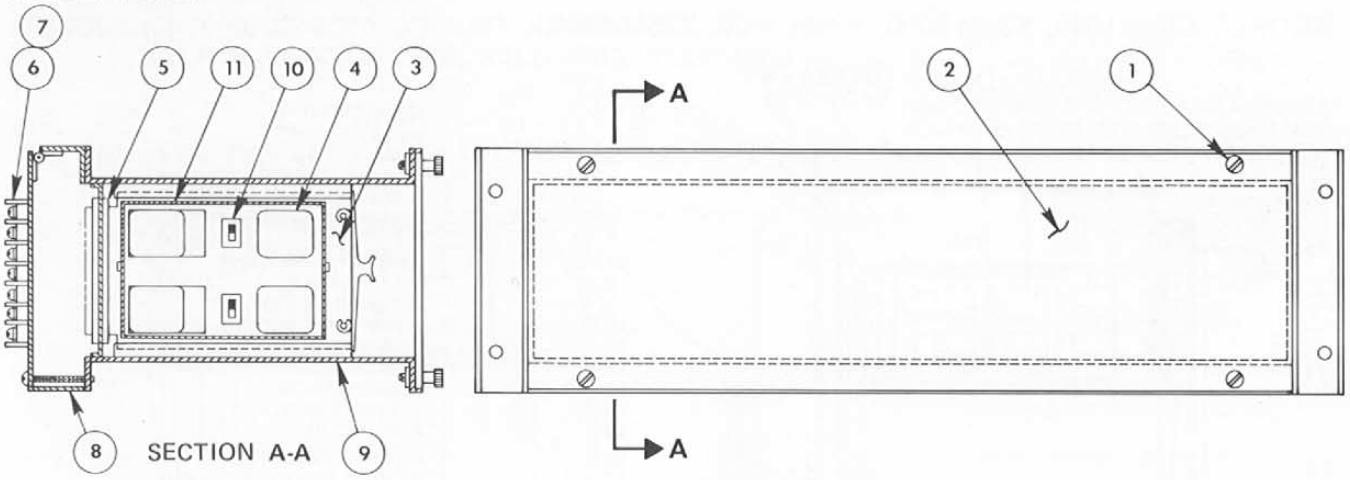
ITEM	DESCRIPTION
1	FASTENERS
2	COVER PLATE
3	FLASHER
4	ALARM MODULE
5	ALARM RELAY
6	PRINTED CIRCUIT CONNECTOR
7	ENCLOSURE
8	MASTER TERMINALS
9	FUSE
10	ALARM POINT TERMINALS
11	LOCK-NONLOCK SWITCH
12	ALARM MODULE COVER

NOTE

1. See Spare Parts List for part numbers.
2. Please specify the following when ordering replacement parts:
   - A. Cabinet Serial Number
   - B. System Voltage – AC or DC
   - C. Electrical Classification: General Purpose Area or Class I, Division 2 Area

PARTS LIST (CONT.)

MODEL X9RR

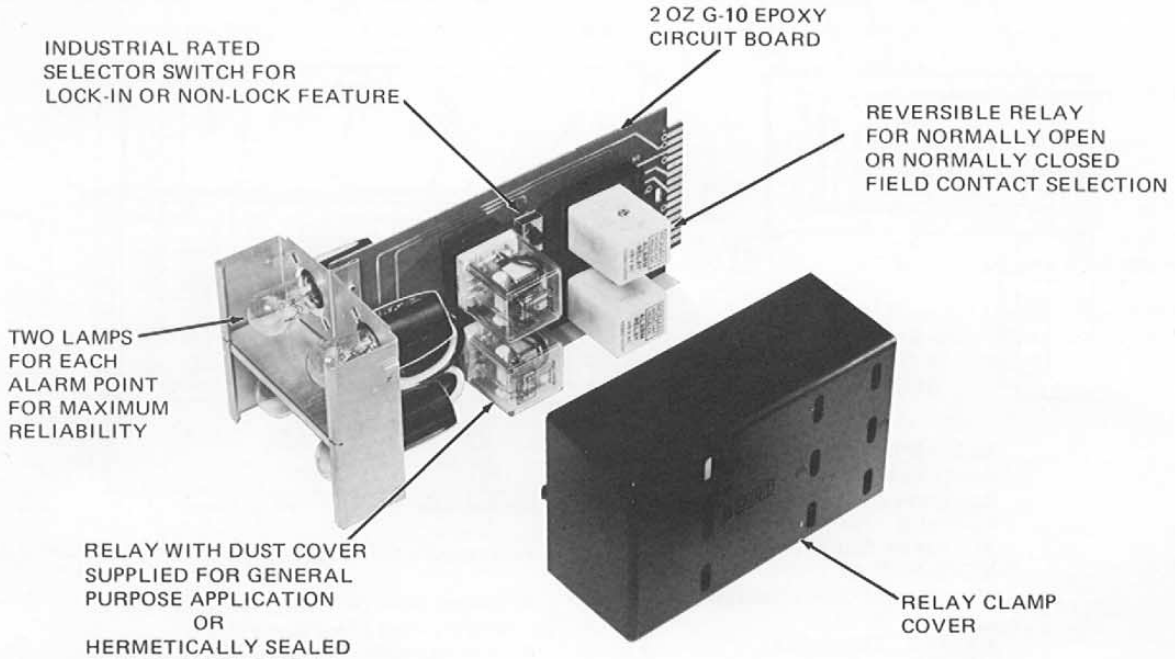


ITEM	DESCRIPTION
1	FRONT PANEL FASTENER — PART NO. 58-28-406-24
2	FRONT PANEL
3	ALARM MODULE
4	ALARM RELAY
5	PRINTED CIRCUIT CONNECTOR
6	ALARM POINT TERMINALS
7	MASTER MODULE TERMINALS
8	REAR TERMINAL PLATE
9	CHASSIS HOUSING
10	LOCK-NONLOCK SWITCH
11	ALARM MODULE COVER

NOTE

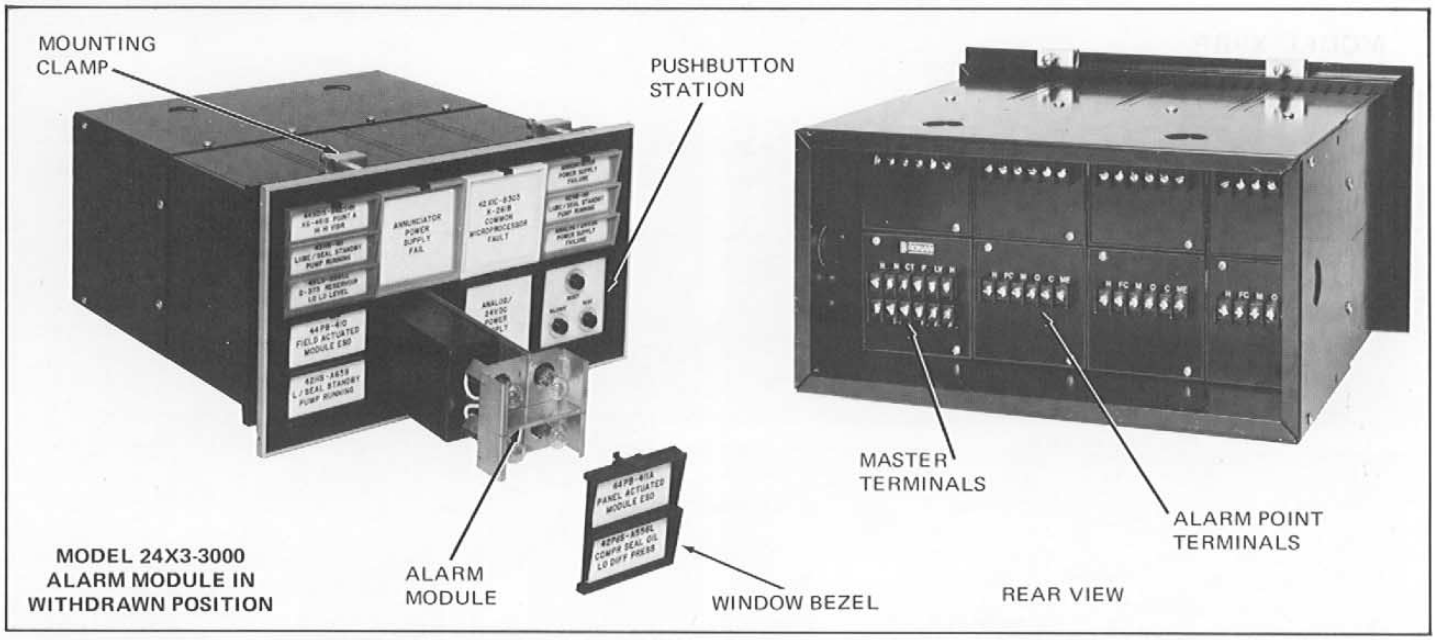
1. See Spare Parts List for part numbers.
2. Please specify the following when ordering replacement parts:
   - A. Cabinet Serial Number
   - B. System Voltage — AC or DC
   - C. Electrical Classification: General Purpose Area or Class I, Division 2 Area

PLUG-IN ALARM MODULE (TYPICAL)



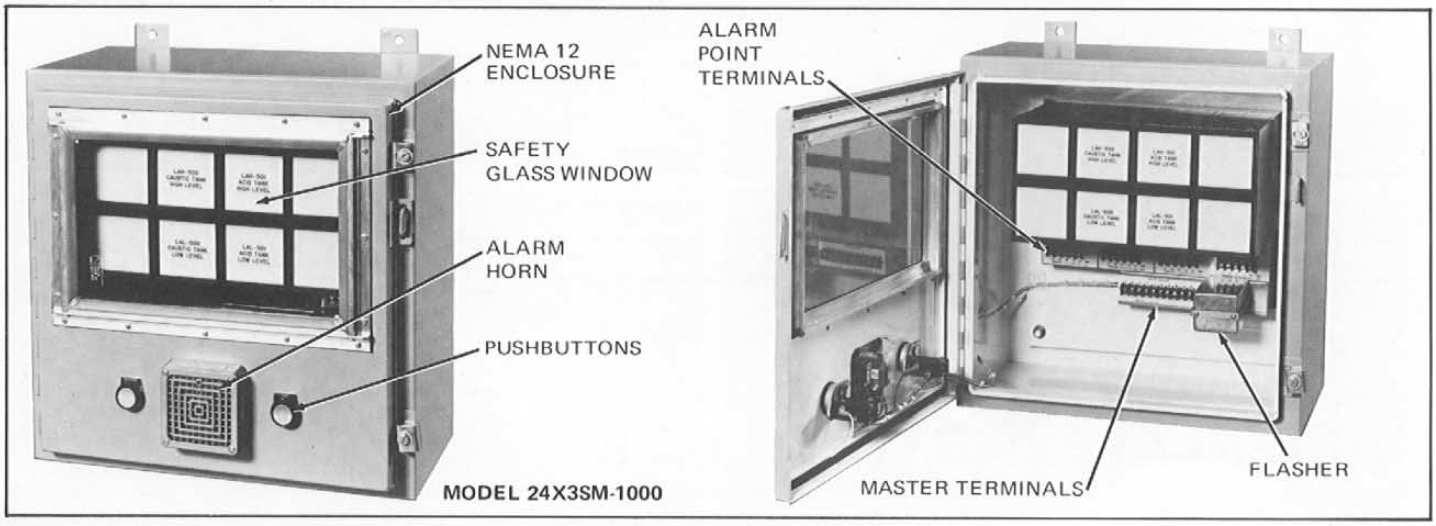
TYPICAL MODULE
MODEL X3-2001-GP-115VAC

FLUSH MOUNTED ALARM CHASSIS



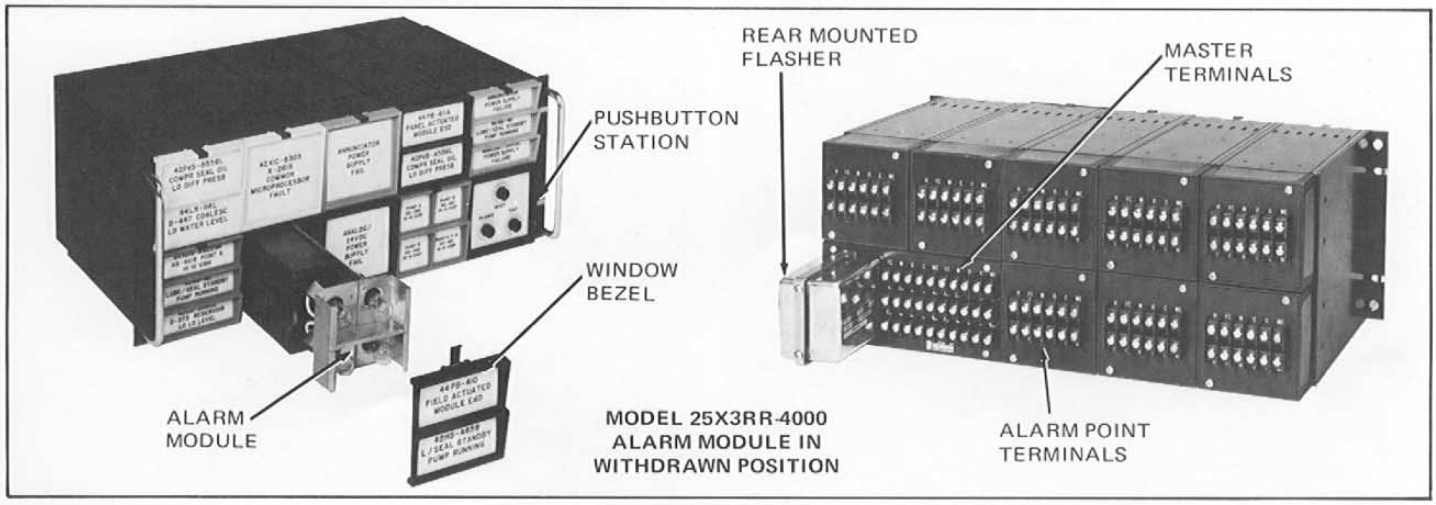
MODEL 24X3-3000 ALARM MODULE IN WITHDRAWN POSITION

SURFACE MOUNTED ALARM SYSTEMS



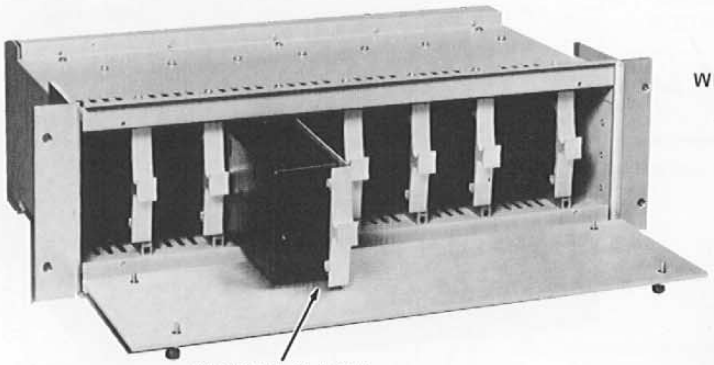
MODEL 24X3SM-1000

RELAY RACK ALARM SYSTEMS

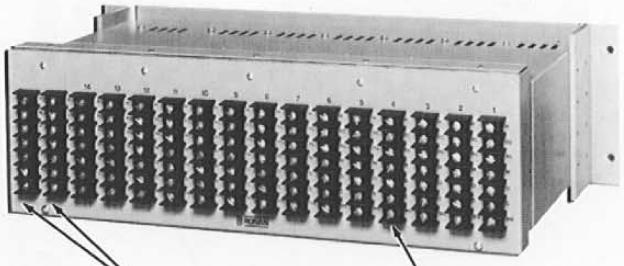


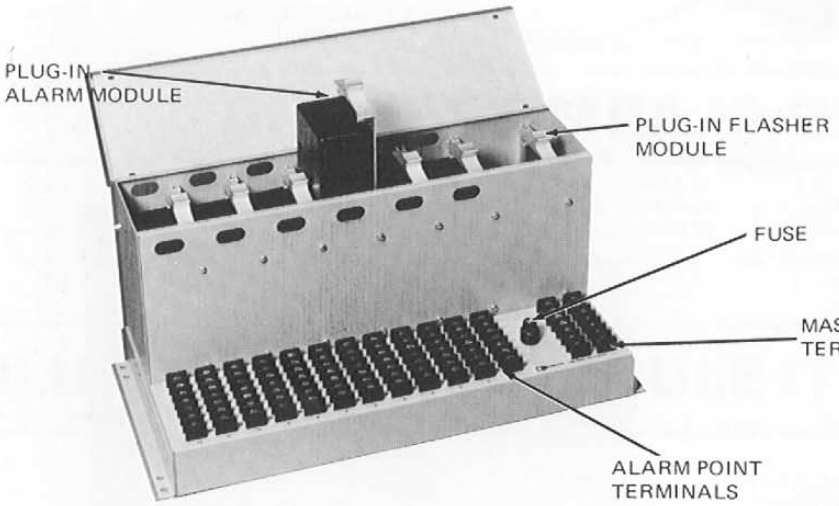
MODEL 25X3RR-4000 ALARM MODULE IN WITHDRAWN POSITION

REMOTE ALARM CHASSIS



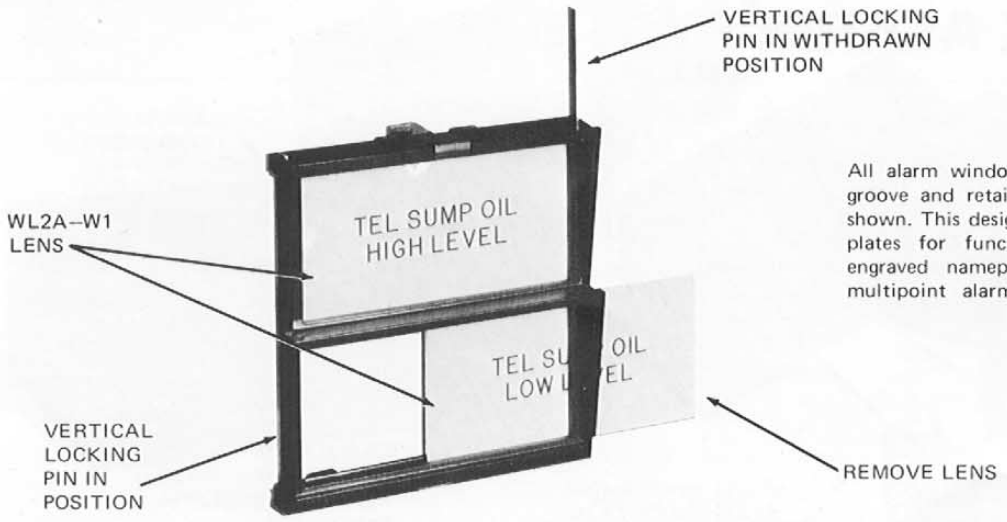
MODEL 7X9RR
WITH FRONT COVER REMOVED
AND ALARM MODULE IN
THE WITHDRAWN POSITION





MODEL 6X9SM
WITH COVER REMOVED

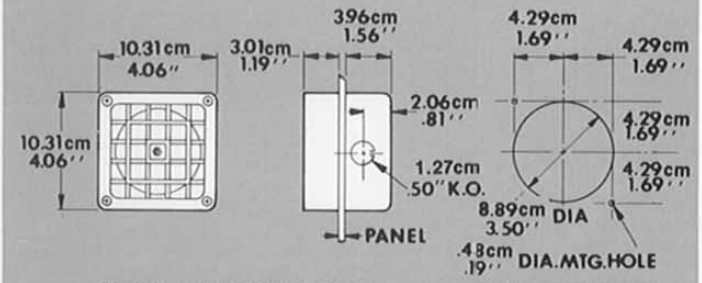
NAMEPLATE INSTALLATION



DB2-0 BEZEL

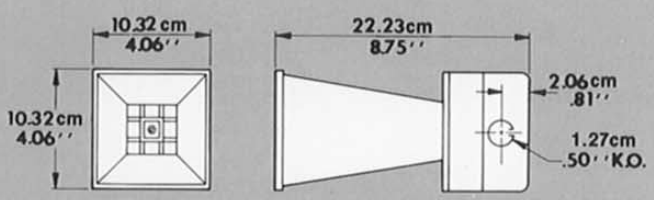
All alarm window lenses are inserted in channel groove and retained with vertical locking pin as shown. This design permits the relocation of nameplates for functional purpose without loss of engraved nameplate as found on conventional multipoint alarm windows.

HORNS & BELLS

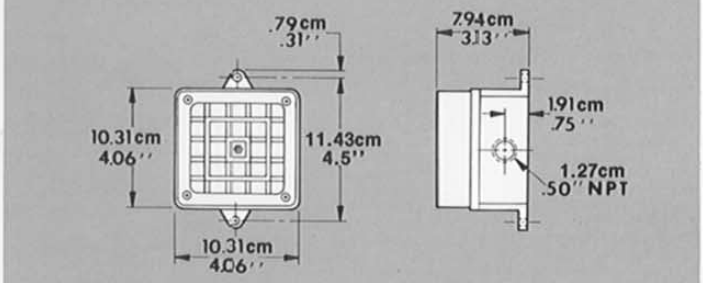


GENERAL PURPOSE HORN
MODEL 350N 115VAC
MODEL 450N 125VDC

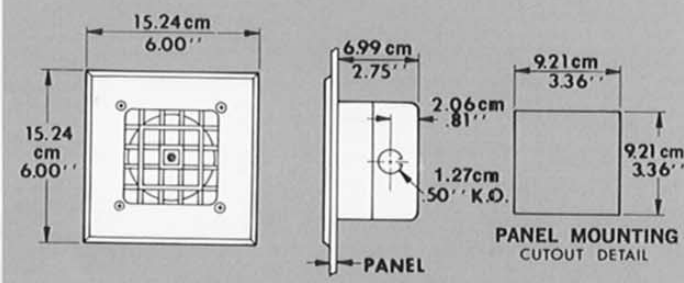
PANEL MOUNTING
CUTOUT DETAIL



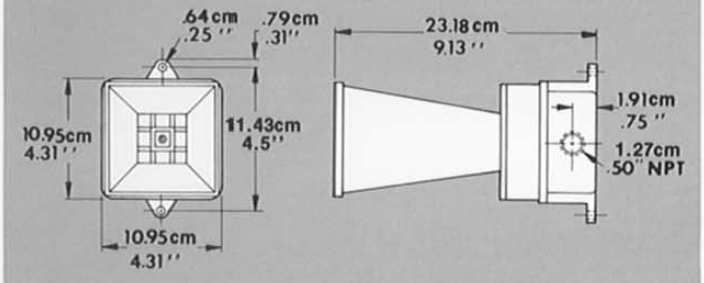
GENERAL PURPOSE PROJECTOR HORN
MODEL 351N 115VAC
MODEL 451N 125VDC



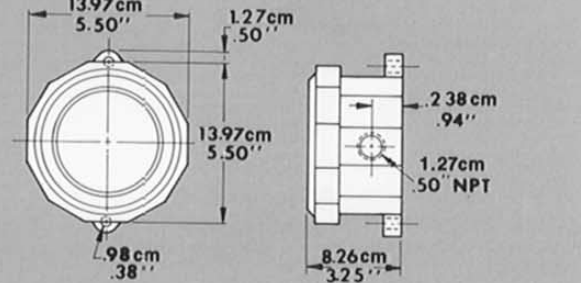
WEATHERPROOF HORN
MODEL 350W 115 VAC
MODEL 450W 125VDC



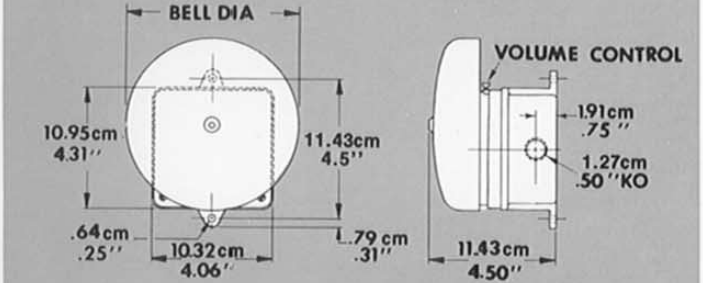
FLUSH MOUNTED HORN
MODEL 350F 115VAC
MODEL 450F 125VDC



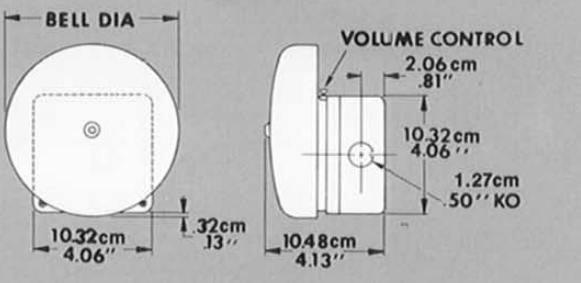
WEATHERPROOF PROJECTOR HORN
MODEL 351W 115VAC
MODEL 451W 125VDC



EXPLOSION PROOF HORN
MODEL 8140 115VAC

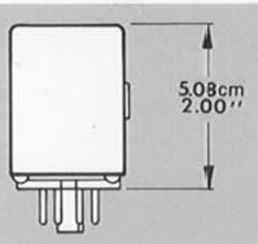


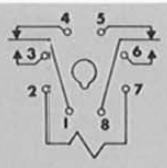
WEATHERPROOF BELL	**DIA**
MODEL 504W 115VAC or 604W 125VDC	4"/10.16cm
MODEL 506W 115VAC or 606W 125VDC	6"/15.24cm
MODEL 510W 115VAC or 610W 125VDC	10"/25.40cm



GENERAL PURPOSE BELL	**DIA**
MODEL 504N 115VAC or 604N 125VDC	4"/10.16cm
MODEL 506N 115VAC or 606N 125VDC	6"/15.24cm
MODEL 510N 115VAC or 610N 125VDC	10"/25.40cm

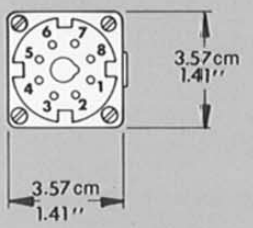
HORN RELAYS & DC POWER SUPPLIES





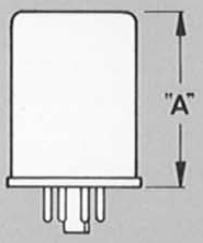
CKT DIAG.
RELAY SHOWN
DEENERGIZED

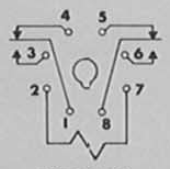
GENERAL PURPOSE RELAY



MODEL	VOLTAGE	CONTACT RATING
KRP-115AC	115VAC	10 AMPS
KRP-125DC	125VDC	.75 AMPS
KRP-24AC	24VAC	10 AMPS
KRP-24DC	24VDC	10 AMPS

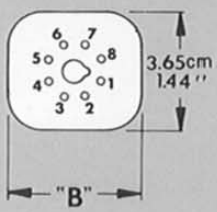
GENERAL PURPOSE RELAY





CKT DIAG.
RELAY SHOWN
DEENERGIZED

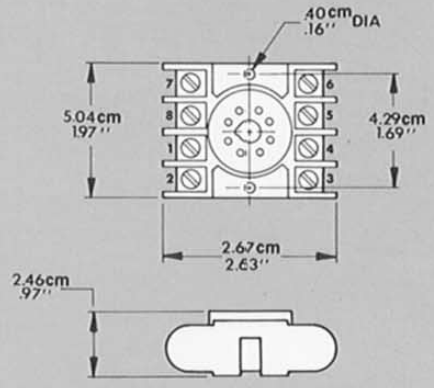
HERMETICALLY SEALED RELAY



A	B	MODEL	VOLT	RATE
2.12''/5.39cm	1.65''/4.20cm	KR7443-115AC	115VAC	10AMPS
2.50''/6.35cm	1.88''/4.78cm	KR7627-24AC	24VAC	10AMPS
2.12''/5.39cm	1.65''/4.20cm	KR7272-24DC	24VDC	10AMPS

HERMETICALLY SEALED RELAY

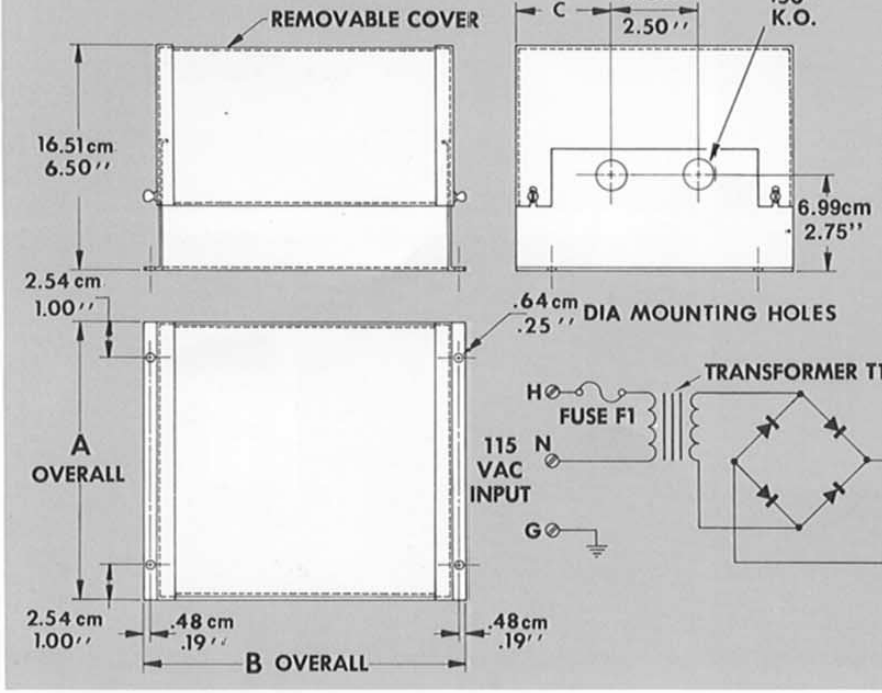
OCTAL SOCKET-SURFACE MOUNTING



MODEL 146-103

NOTE
Material — Brown Melamine.
Rating — 1250 Volts at 5 Amps.
Recommended Mtg. Screw — 6/32 x 1''

POWER SUPPLIES AC-DC TYPE



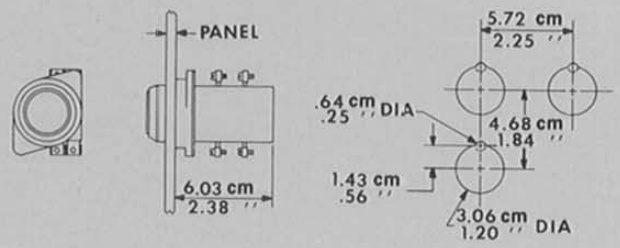
POWER SUPPLIES			
MODEL	A	B	C
115-24-125	6''/15.24cm	9¼''/23.50cm	1¾''/4.45cm
115-24-250	6''/15.24cm	9¼''/23.50cm	1¾''/4.45cm
115-24-375	6''/15.24cm	9¼''/23.50cm	1¾''/4.45cm
115-24-500	8''/20.32cm	10⅛''/25.72cm	2¾''/6.99cm
115-24-750	8''/20.32cm	10'' /25.72cm	2¾''/6.99cm

WATTAGE RATING
OUTPUT VOLTAGE DC
INPUT VOLTAGE AC

NOTE
For other output voltages please consult factory.

PUSHBUTTONS & MRI RELAY

General Purpose: Pushbuttons

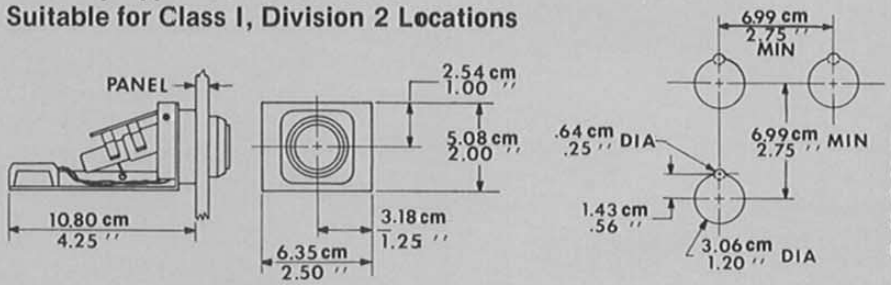


Contact Rating
115VAC - 10AMPS
24VAC - 10AMPS
125VDC - 2AMPS
24VDC - 5AMPS

Refer to specifications on Pages 1 and 2 for computing current load of lamp test, silence, and reset pushbuttons. Silence and reset pushbuttons operate one relay per alarm point.

ALARM SEQUENCE	NUMBER OF PUSHBUTTONS	NAMEPLATES
"A" SEQUENCE FIRST ALERT	TWO-202B	SILENCE, TEST
MANUAL RESET FIRST ALERT MANUAL RESET RINGBACK	THREE-202B	SILENCE, TEST, RESET

Mercury Type Pushbuttons and Suitable for Class I, Division 2 Locations

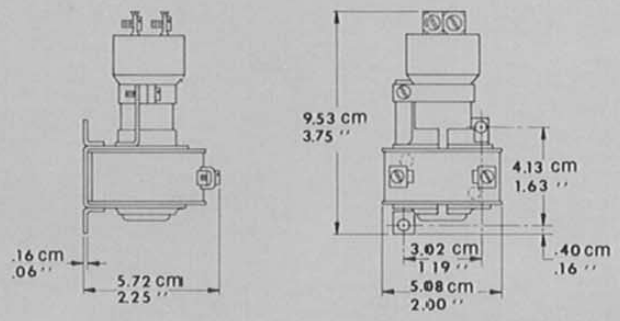


Contact Rating
115VAC - 10AMPS
24VAC - 10AMPS
125VDC - 5AMPS
24VDC - 10AMPS

Refer to specifications on Pages 1 and 2 for computing current load of lamp test, silence and reset pushbuttons. Silence and reset pushbuttons operate one relay per alarm point.

ALARM SEQUENCE	NUMBER OF PUSHBUTTONS	NAMEPLATES
"A" SEQUENCE FIRST ALERT	1-X13 PINO 1-X13PINC	SILENCE, TEST
MANUAL RESET FIRST ALERT MANUAL RESET RINGBACK	1-X13 PINO 2-X13PINC	SILENCE, TEST, RESET

Mercury Relay



Coil Voltage	Model Number	Contact Rating
125VDC, .02A	MR1-125VDC	25AMP
115VAC, .047A	MR1-115VAC	30AMP
24VAC, .228A	MR1- 24VAC	30AMP
24VDC, .110A	MR1- 24VDC	30AMP

Note: Recommended on systems where Lamp Load exceeds Flasher Contact and Lamp Test Pushbutton contact rating.

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BY
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RONAN WARRANTY

RONAN warrants equipment of its own manufacture to be free from defects in material and workmanship, under normal conditions of use and service, and will replace any component found to be defective, on its return, transportation charges prepaid, within one year of its original purchase. This warranty carries no liability, either expressed or implied, beyond our obligations to replace the unit which carries the warranty.

Note: Specifications and designs subject to change without notice.

RONAN

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