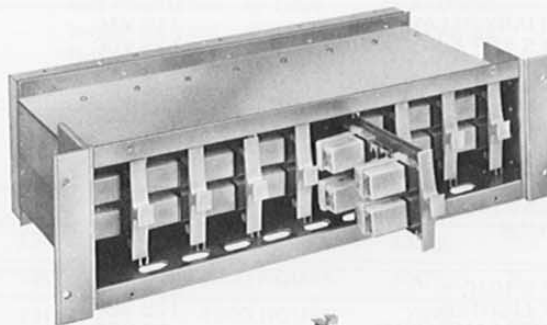
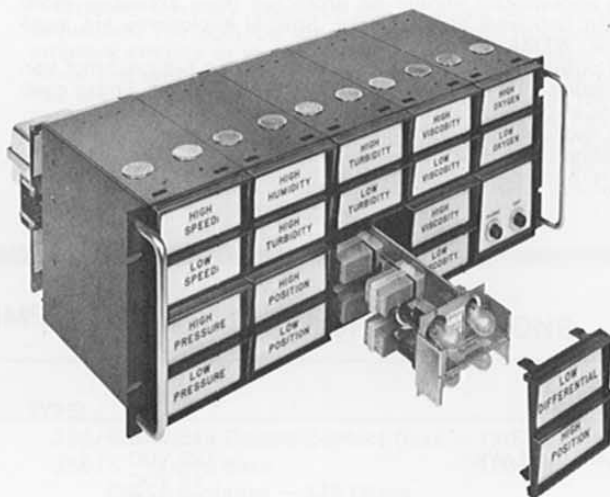
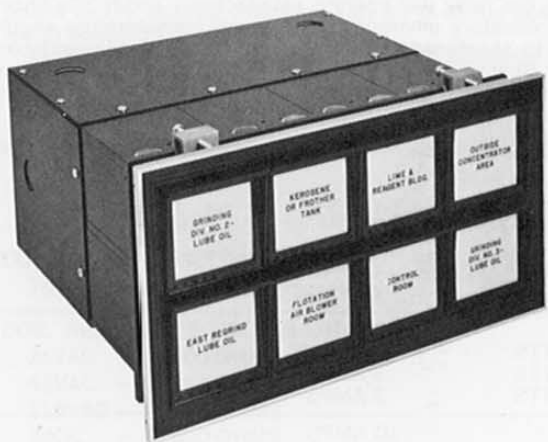


INSTALLATION & OPERATING MANUAL

SERIES X2 & X8 MODELS

RELAY ANNUNCIATOR SYSTEMS



**RONAN ENGINEERING
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Hornsby, N.S.W. 2077
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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 and the Dularm window is illuminated with 6 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 footcandles.

POSITION

The annunciator will operate in any position. Transient shock loads of 5Gs will not damage the annunciator. In normal operation the relay will operate satisfactorily under 3Gs 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
SERIES X23 ALARM RELAYS*	115 VAC	1.2 VA	3 AMPS
	125 VDC	.9 WATTS	.5 AMPS
	48 VDC	.9 WATTS	3 AMPS
	24 VDC	.9 WATTS	3 AMPS
AUXILIARY RELAYS SERIES KRP & KR7272	115 VAC	2 VA	10 AMPS
	125 VDC	3 WATTS	.75 AMPS
	48 VDC	3 WATTS	10 AMPS
	24 VDC	3 WATTS	10 AMPS
AUXILIARY RELAYS MERCURY TYPE SERIES MR	125 VDC	5.0 WATTS	6 AMPS
	48 VDC	5.0 WATTS	15 AMPS
	24 VDC	6.5 WATTS	20 AMPS
SERIES X14D1 FLASHER	115 VAC	5 VA	10 AMPS TYPE-A
	125 VDC	5 WATTS	1 AMPS** TYPE-C
	24 VDC	5 WATTS	5 AMPS** TYPE-C
SERIES 1010 BACK LIGHTED WINDOW LAMP LOAD	115 VAC	12 WATTS	(TWO-6 WATT LAMPS)
	125 VDC	12 WATTS	(TWO-6 WATT LAMPS)
	24 VDC	6 WATTS	(TWO-3 WATT LAMPS)
SERIES 1031 BACK LIGHTED WINDOW LAMP LOAD	115 VAC	6 WATTS	
	125 VDC	6 WATTS	(TWO-3 WATT LAMPS)
	24 VDC	6 WATTS	
HORN 350N 450N 450N	115 VAC	20 VA	100 DB AT 10'
	125 VDC	12 WATTS	97 DB AT 10'
	24 VDC	6 WATTS	97 DB AT 10'
PUSHBUTTONS LARGE OILTIGHT	115 VAC		10 AMPS
	125 VDC		2 AMPS***
	24 VDC		5 AMPS
PUSHBUTTONS SERIES X13 MERCURY TYPE	115 VAC		10 AMPS
	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.

***Recommended 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 to maintain the auxiliary contact in the alarm position.

ALARM RELAY SPECIFICATIONS

COIL PULL-IN VOLTAGE

75% or less of design voltage

COIL RESISTANCE VALUES

24VAC — 200 OHMS
48VAC — 750 OHMS
115VAC — 3900 OHMS
24DC — 600 OHMS
48DC — 2000 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

4PDT for all alarm relays
Material — fine silver with gold flash
Rating — 3 amps at 30VDC or 115VAC resistive

INSULATING MATERIAL

Molded glass reinforced alkylid
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

ALARM LAMP SPECIFICATIONS

TYPE:

3S6/5DC Lamp Double Contact Base — 120 Volts
3S6/5 Lamp Base — 120 Volts
Cold Resistance — 370 Ohms
Hot Resistance @ 120V 4800 Ohms
Inrush Current @ 120V .300 Amps
Normal Current @ 120V .025 Amps

OPERATING VOLTAGE	APPROX LIFE EXPECTANCY	APPROX LIGHT OUTPUT	POWER CONSUMPTION
140 VOLTS	225 HOURS	172%	3.8 WATTS
130 VOLTS	525 HOURS	133%	3.4 WATTS
120 VOLTS	1500 HOURS	100%	3 WATTS
110 VOLTS	4500 HOURS	73%	2.6 WATTS
100 VOLTS	16500 HOURS	53%	2.3 WATTS

TYPE:

6S6/DC Lamp Double Contact Base — 120 Volts
6S6 Lamp Screw Base — 130 Volts
Cold Resistance — 200 Ohms
Hot Resistance @ 130V 2600 Ohms
Inrush Current @ 130V .600 Amps
Normal Current @ 130V .050 Amps

OPERATING VOLTAGE	APPROX LIFE EXPECTANCY	APPROX LIGHT OUTPUT	POWER CONSUMPTION
140 VOLTS	600 HOURS	130%	6.7 WATTS
130 VOLTS	1500 HOURS	100%	6.0 WATTS
120 VOLTS	4500 HOURS	75%	5.3 WATTS
110 VOLTS	12854 HOURS	55%	4.6 WATTS

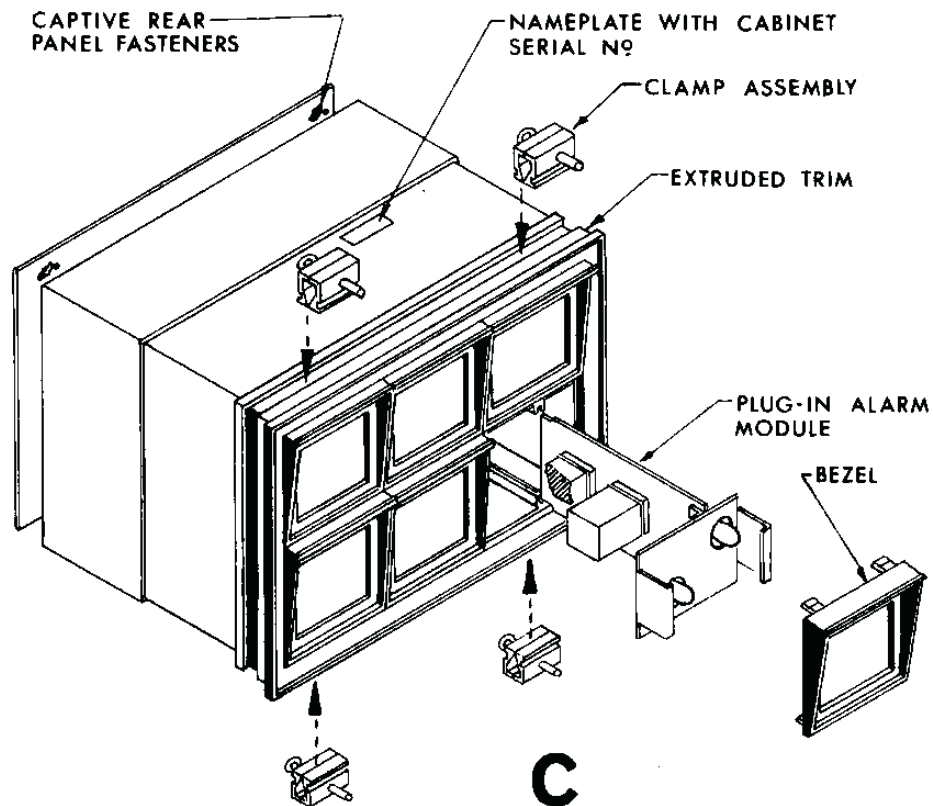
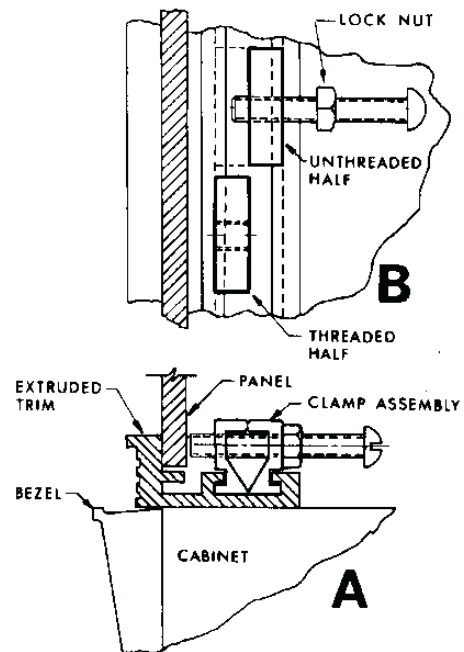
INSTALLATION INSTRUCTIONS

FOR ALL PANEL MOUNTED RONAN SYSTEMS SERIES X2-1010 AND SERIES X2-1031.

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.
2. 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 both 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 – 48VDC
Operating Range – 43VDC to 53VDC

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. In alarm systems using more than one lamp color for alarms, such as Motoralarm or Trialarm, an individual lamp test pushbutton will be provided for each color.

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 two different designs to accomplish this option:

Type I — Resistor in Series With "A" Relay

Type II — Reversible "A" Relay

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

A. Type I — Resistor in Series With "A" Relay

Using "normally open" field contacts (i.e., contact to close for an alarm) and the alarm switch on the module in the "N.O." position, jumper the field contacts to create an alarm condition.

Using "normally closed" field contacts (i.e., contact to open for an alarm) and the alarm switch on the module in the "N.C." position, jumper the field contacts and then remove to create an alarm condition.

B. Type II — Reversible "A" Relay

The alarm relay socket has two positions into which to insert the relay "normally open" (N.O.) or "normally closed" (N.C.) position. In addition, each input has a field contact selector switch also marked "normally open" (N.O.) or "normally closed" (N.C.). When using "normally open" field contacts, the alarm relay and the field input switch are 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 and the field input switch are 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.

Note: Failure to set the relay and the field contact selector switch on the alarm module in the corresponding N.O. or N.C. position will result in improper operation. However, no damage will result if it is used this way by accident.

C. With the alarm condition created by "A" and "B" 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.

D. 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. On horn reset type sequences only the horn will be turned off.

E. 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.

F. 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.

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 error 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 "H" 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

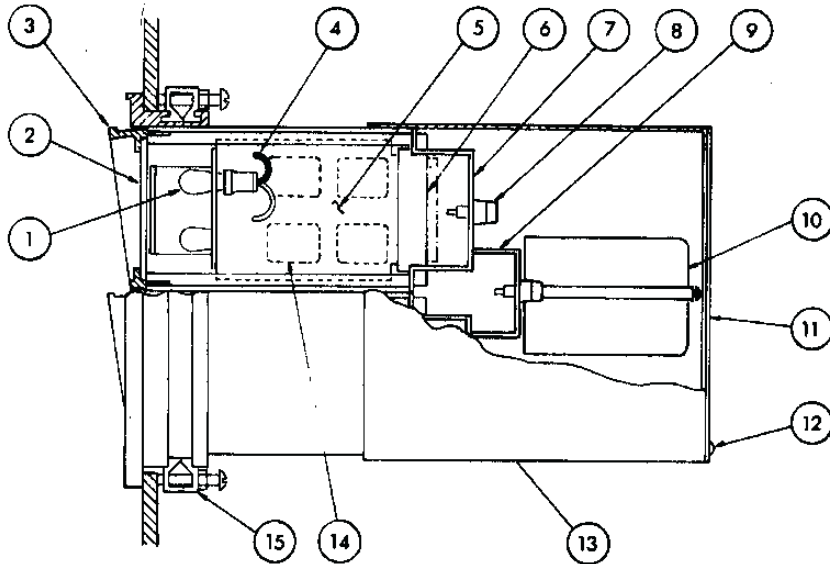
A defective flasher will either leave the lamps lit continuously or will not illuminate any lamps during an alarm condition. Since the horn is on the same circuit as the flasher it also should be sounding as the flasher is operating and will verify that power is being supplied to the flasher. Using the 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 X2-1010, X2-1031, X2-1010LR, X2-1031LR



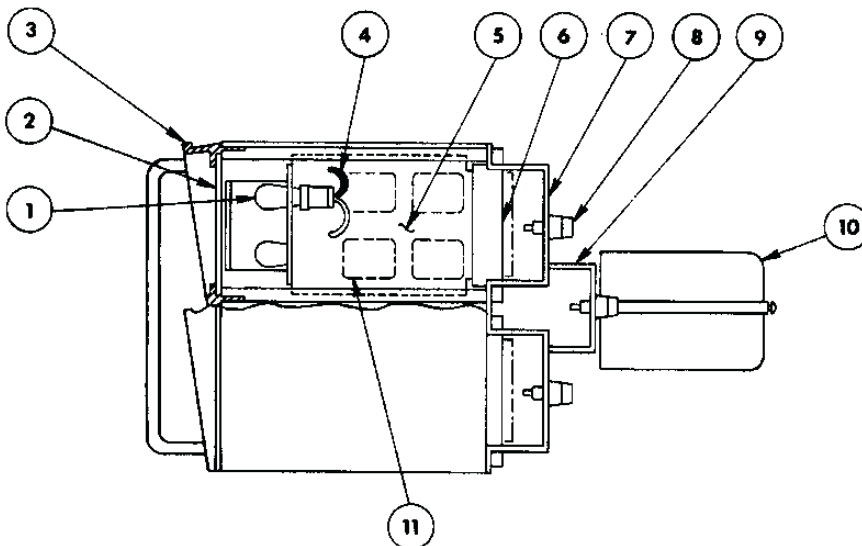
REAR COVERS OMITTED AND FLASHERS MOUNTED REMOTELY OR PLUG-IN TYPE ON MODELS X2-1010LR & X2-1031LR

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 II 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 – PART NO. SOU
5	ALARM MODULE	13	REAR HOUSING ENCLOSURE
6	PRINTED CIRCUIT CONNECTOR	14	ALARM RELAY
7	REAR TERMINAL PLATE	15	PANEL CLAMP ASSEMBLY – PART NO. X2A86
8	ALARM POINT TERMINALS		

MODELS X2-1010RR, X2-1031RR

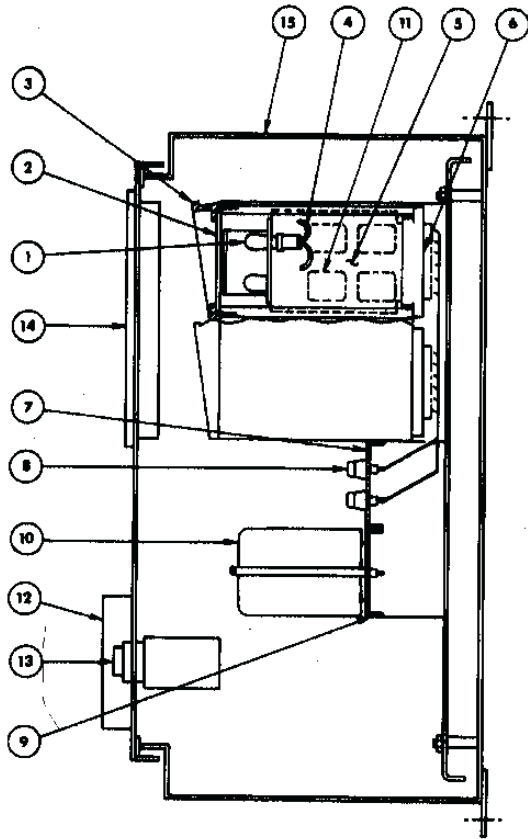


NOTE

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 II 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		

MODELS X2-1010SM, X2-1031SM

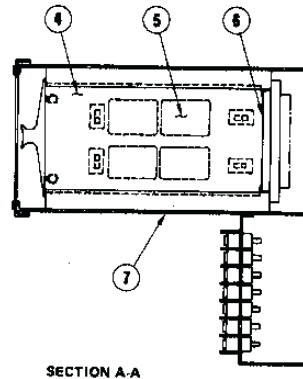
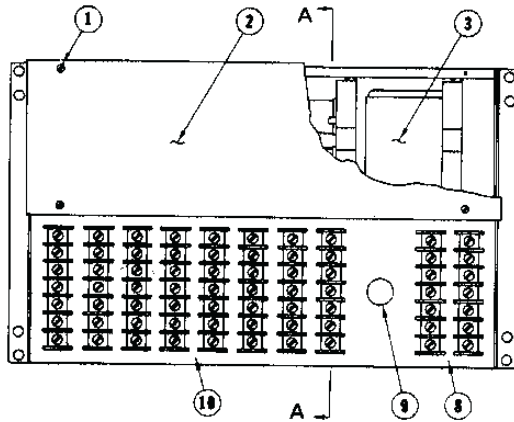


ITEM	DESCRIPTION
1	ALARM LAMP
2	NAMEPLATE – SPECIFY COLOR
3	BEZEL – SPECIFY COLOR
4	LAMP SOCKET
5	ALARM MODULE
6	PRINTED CIRCUIT CONNECTOR
7	TERMINAL PLATE
8	ALARM POINT TERMINALS
9	MASTER MODULE
10	FLASHER
11	ALARM RELAY
12	HORN
13	PUSHBUTTON
14	VIEWING WINDOW
15	ENCLOSURE

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 II Area

MODEL X8SM

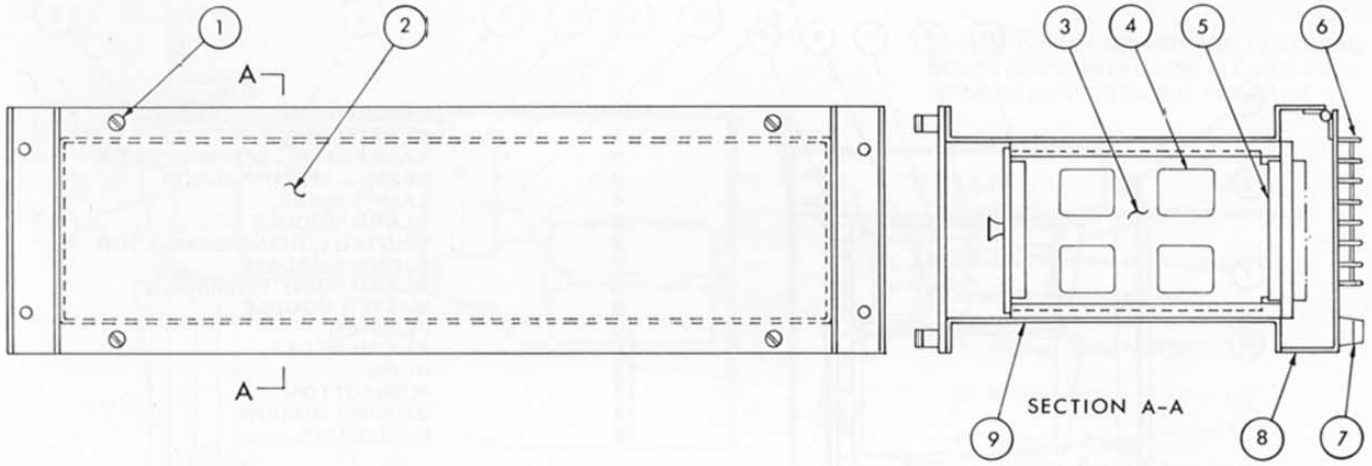


ITEM	DESCRIPTION
1	FASTENERS
2	COVER PLATE
3	FLASHER
4	ALARM MODULE
5	ALARM RELAY
6	PRINTED CIRCUIT CONNECTOR
7	ENCLOSURE
8	MASTER TERMINALS
9	FUSE
10	ALARM POINT TERMINALS

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 II Area

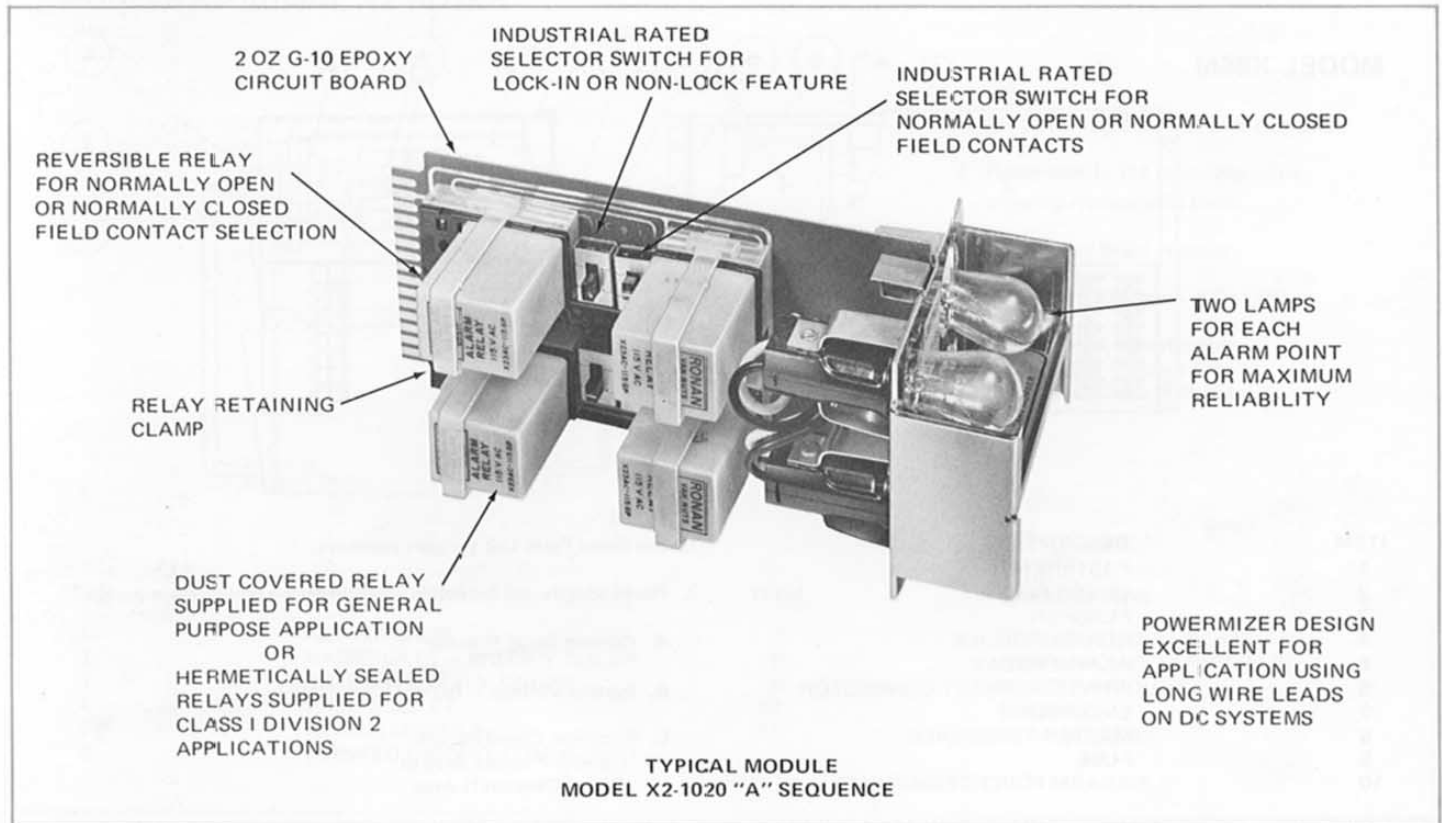
MODEL X8RR



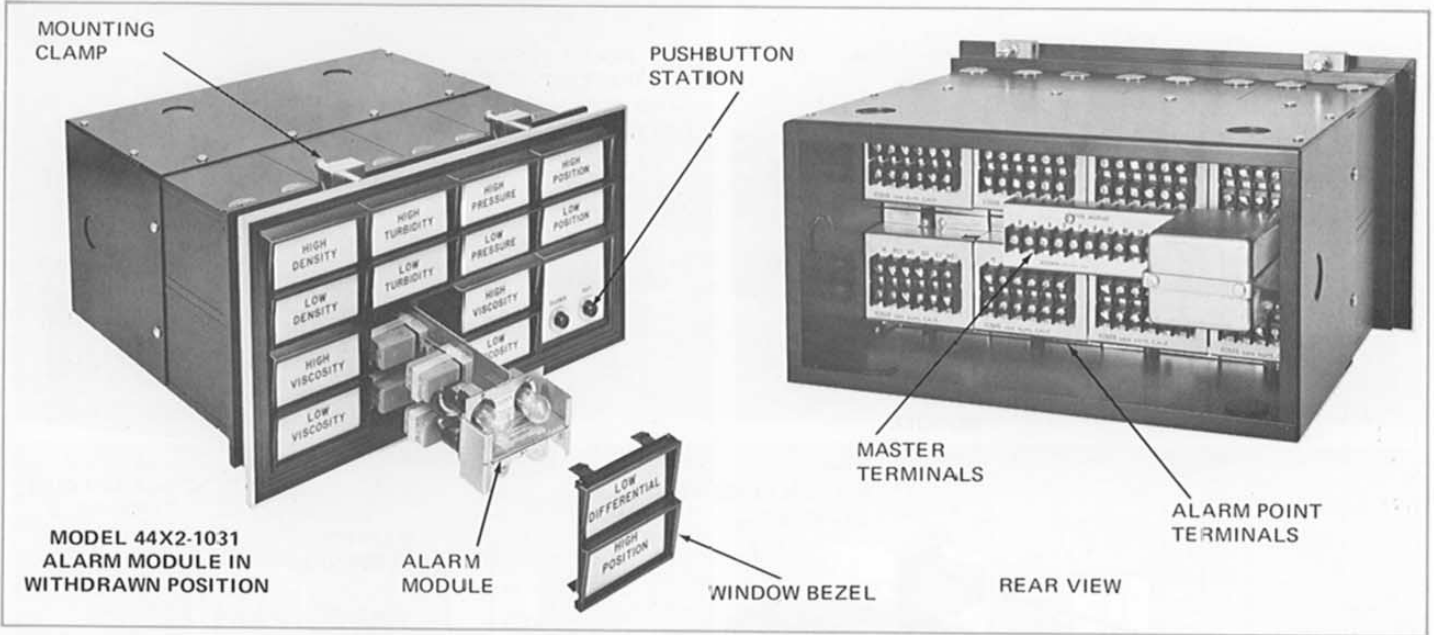
ITEM	DESCRIPTION
1	FRONT PANEL FASTENER – PART NO. 58-28-406-24
2	FRONT PANEL
3	ALARM MODULE
4	ALARM RELAY
5	PRINTED CIRCUIT CONNECTOR
6	ALARM POINT TERMINALS
7	MASTER MODULE TERMINALS
8	REAR TERMINAL PLATE
9	CHASSIS HOUSING

- NOTE**
- See Spare Parts List for part numbers.
 - 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 II Area

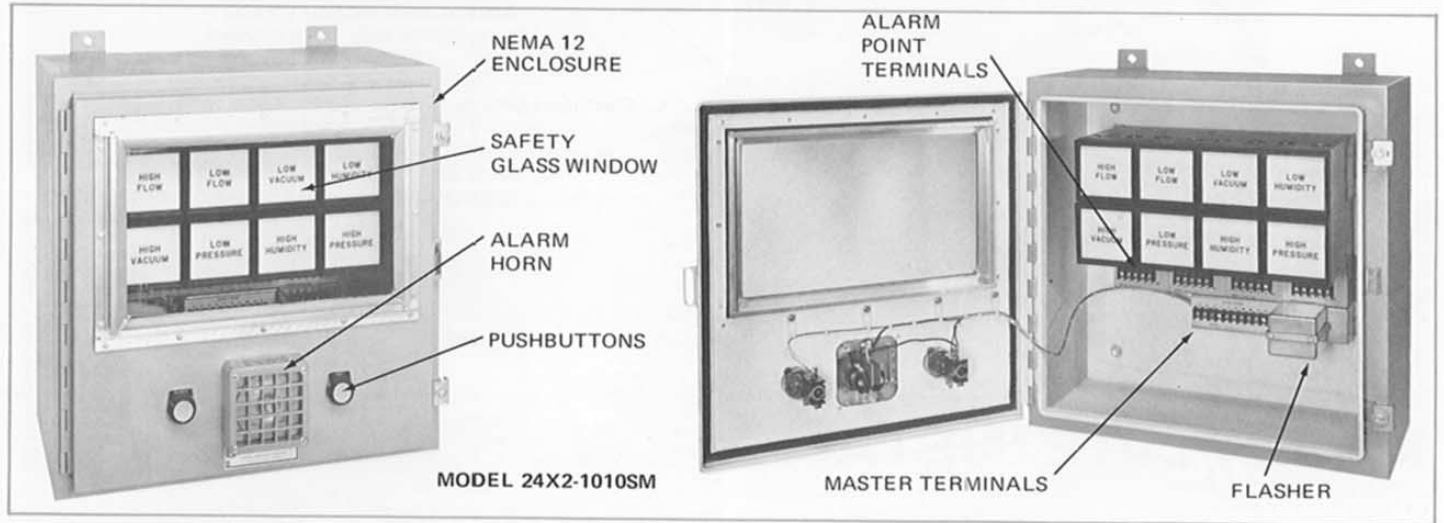
PLUG-IN ALARM MODULE (TYPICAL)



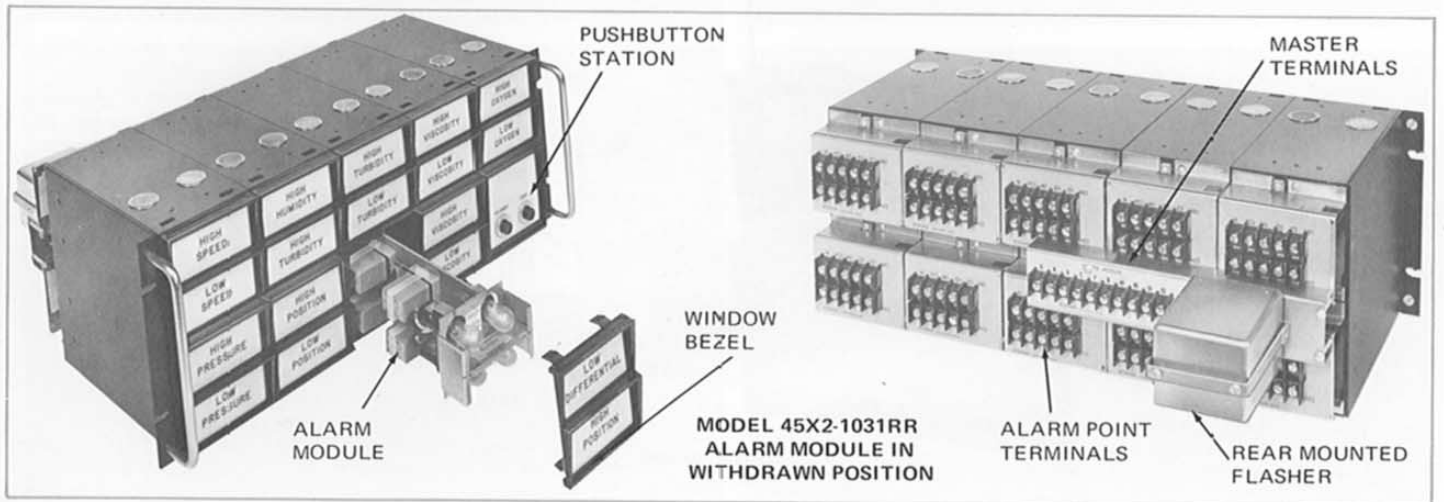
FLUSH MOUNTED ALARM CHASSIS



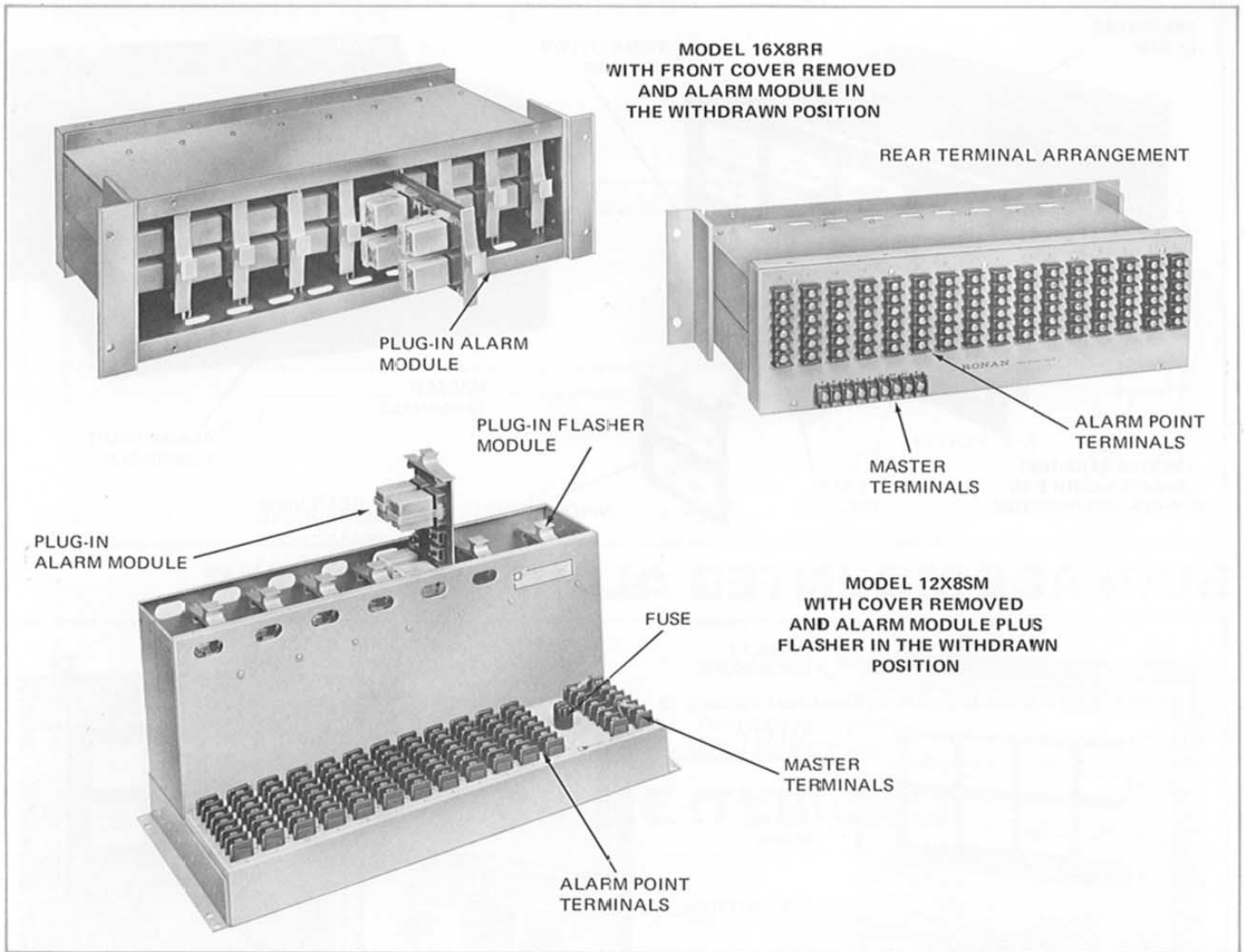
SURFACE MOUNTED ALARM SYSTEMS



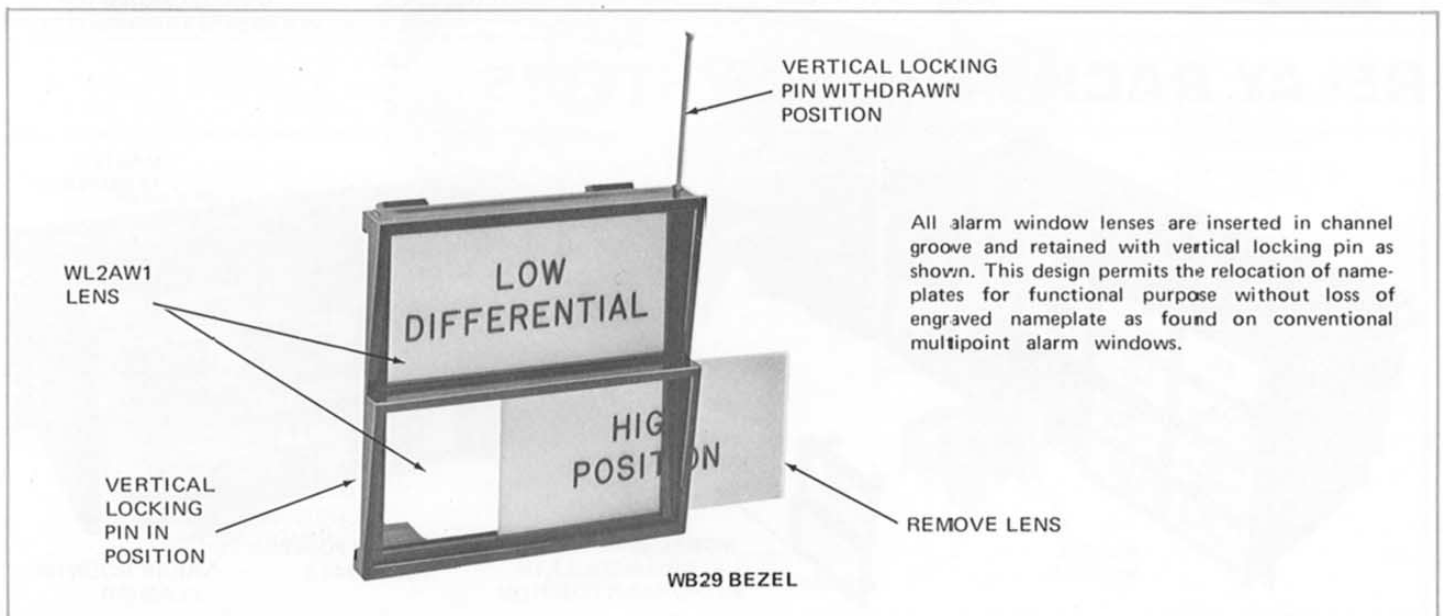
RELAY RACK ALARM SYSTEMS



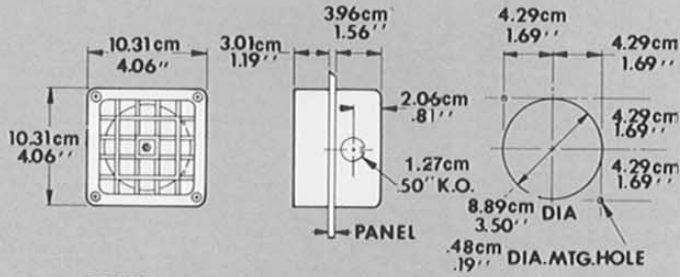
REMOTE ALARM CHASSIS



NAMEPLATE INSTALLATION

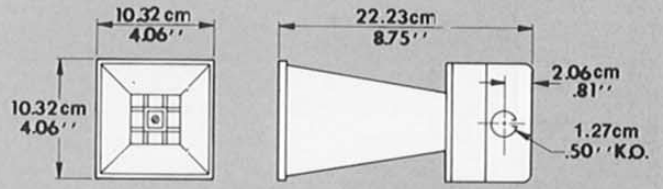


HORNS & BELLS

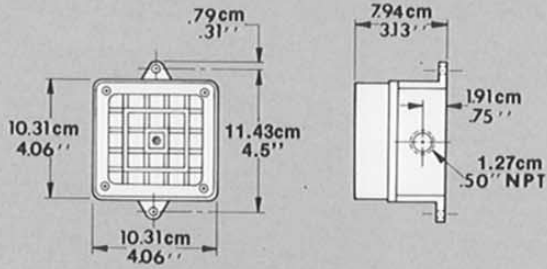


GENERAL PURPOSE HORN
 MODEL 350N 115VAC
 MODEL 450N 125VDC

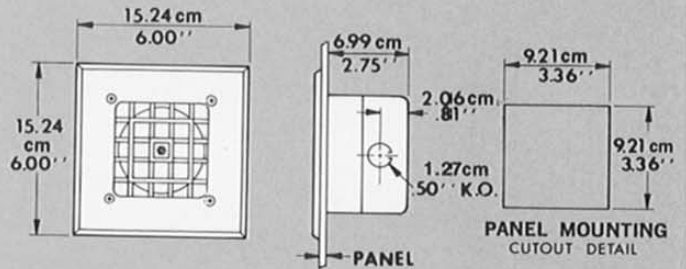
PANEL MOUNTING
 CUTOUT DETAIL



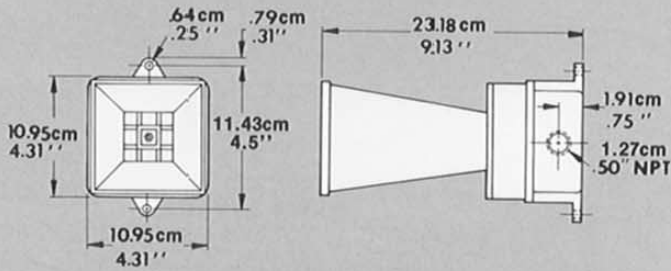
GENERAL PURPOSE PROJECTOR HORN
 MODEL 351N 115VAC
 MODEL 451N 125VDC



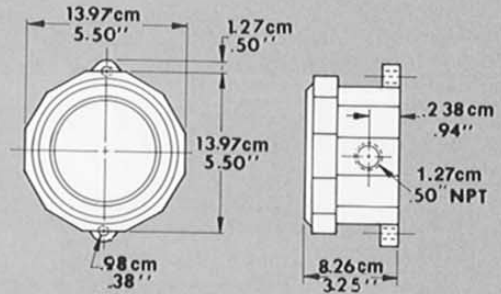
WEATHERPROOF HORN
 MODEL 350W 115 VAC
 MODEL 450W 125VDC



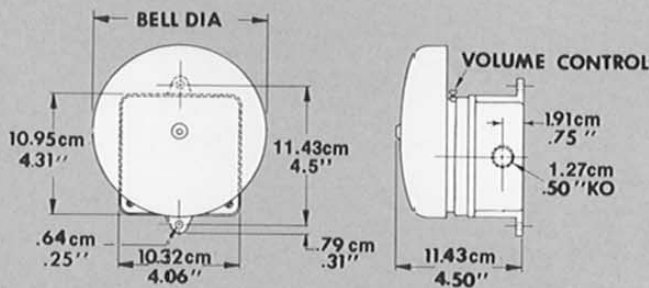
FLUSH MOUNTED HORN
 MODEL 350F 115VAC
 MODEL 450F 125VDC



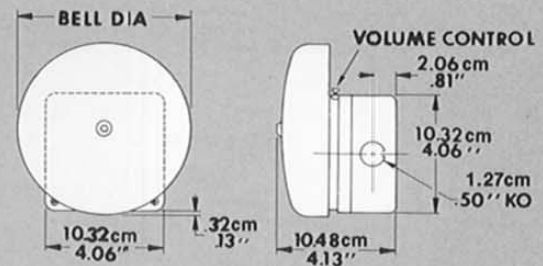
WEATHERPROOF PROJECTOR HORN
 MODEL 351W 115VAC
 MODEL 451W 125VDC



EXPLOSION PROOF HORN
 MODEL 8140 115VAC

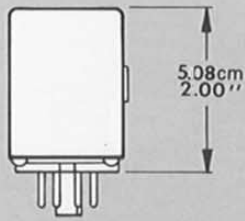


WEATHERPROOF BELL
 MODEL 504W 115VAC or 604W 125VDC 4"/10.16cm
 MODEL 506W 115VAC or 606W 125VDC 6"/15.24cm
 MODEL 510W 115VAC or 610W 125VDC 10"/25.40cm

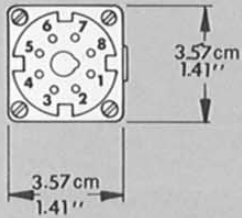


GENERAL PURPOSE BELL
 MODEL 504N 115VAC or 604N 125VDC 4"/10.16cm
 MODEL 506N 115VAC or 606N 125VDC 6"/15.24cm
 MODEL 510N 115VAC or 610N 125VDC 10"/25.40cm

HORN RELAYS & DC POWER SUPPLIES

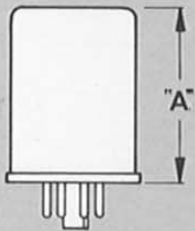


GENERAL PURPOSE
RELAY

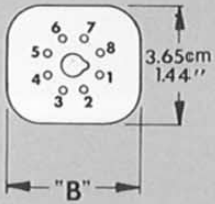


MODEL	VOLTAGE	CONTACT RATING
KRP-115AC	115VAC	10 AMPS
KRP-125DC	125VDC	.75 AMPS
KRP-24AC	24VAC	10 AMPS
KRP-24DC	24VDC	10 AMPS

GENERAL PURPOSE RELAY



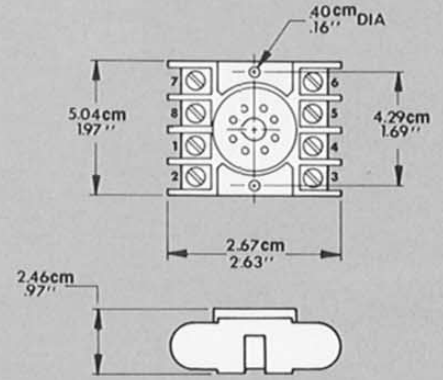
HERMETICALLY SEALED
RELAY



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

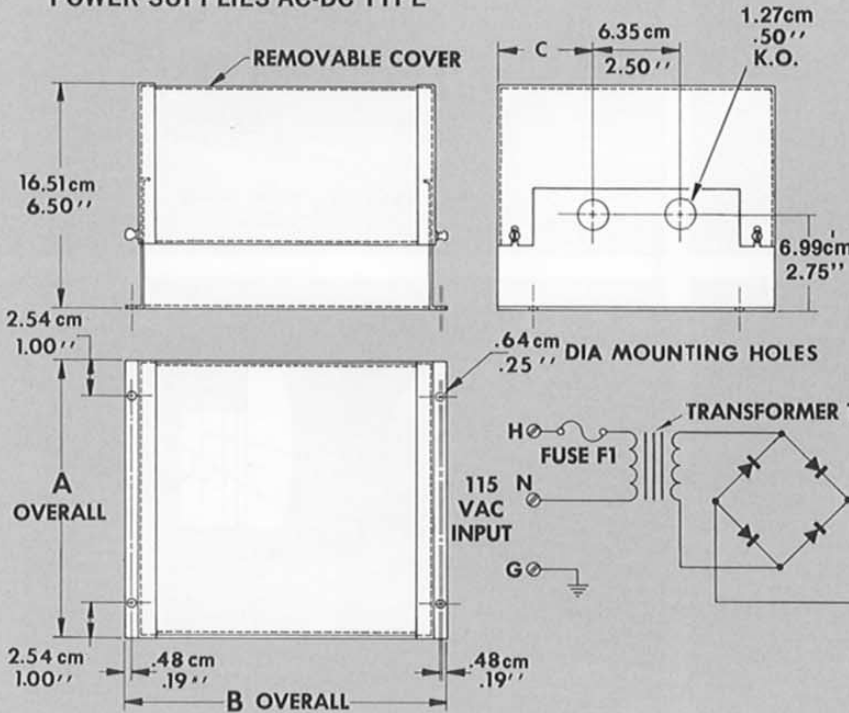


MODEL 146-103

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	9 1/4" / 23.50cm	1 3/4" / 4.45cm
115-24-250	6" / 15.24cm	9 1/4" / 23.50cm	1 3/4" / 4.45cm
115-24-375	6" / 15.24cm	9 1/4" / 23.50cm	1 3/4" / 4.45cm
115-24-500	8" / 20.32cm	10 1/8" / 25.72cm	2 3/4" / 6.99cm
115-24-750	8" / 20.32cm	10" / 25.72cm	2 3/4" / 6.99cm

WATTAGE RATING
OUTPUT VOLTAGE DC
INPUT VOLTAGE AC

NOTE

For other output voltages please consult factory.

**OTHER PRODUCTS
BY
RONAN**

**SOLID STATE ANNUNCIATORS
RTD TEMPERATURE MONITORS
TWO-WIRE MOTOR CONTROL SYSTEMS
ELECTRONIC TRIP MODULES
MOTOR STOP-START STATIONS
TRICOLOR & ENGRAVABLE PANEL LIGHTS
EXPLOSION PROOF ALARMS
CONTACT MONITORS
GRAPHIC DISPLAYS
EVENTS RECORDERS**

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.