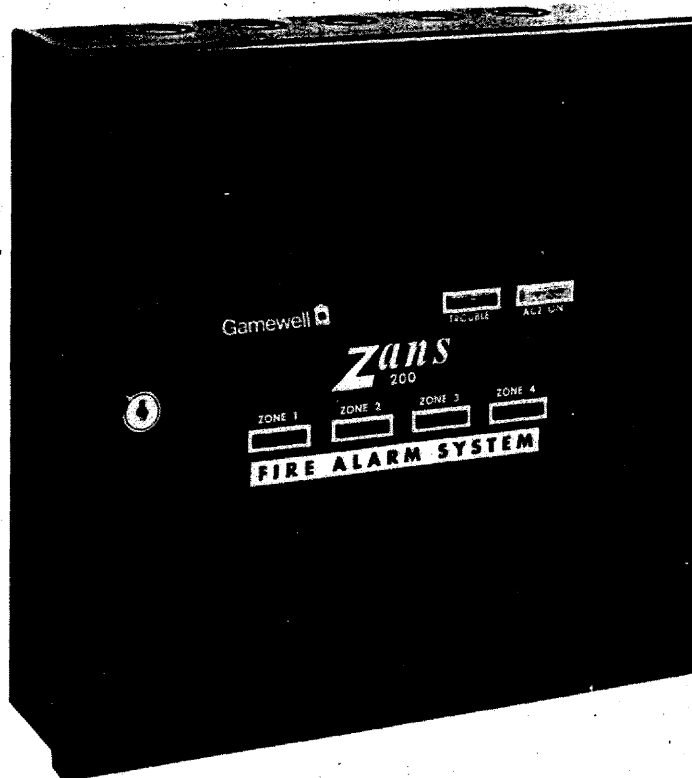


DATA SHEET 1651



Zans 200 Fire Alarm Control Unit



Economical, reliable protection for one to twelve zones.

- Designed for institutional, commercial and industrial applications in new and existing buildings.
- Automatic operation, self-checking capability.
- One, four, eight or twelve zone coverage.
- Low voltage circuits.
- Conforms to NFPA Standards 72A, B, C, and D.
- UL listed.

The versatile fire alarm control unit for a wide range of applications

Zans 200 is a flexible, low-cost fire alarm control unit for institutional, commercial and industrial applications. The control unit is the heart of the system

and is available with one, four, eight or twelve zones. Automatic operation, self-checking capability, low voltage circuits, and ease of installation in new or existing structures make this system as convenient for the engineer or electrical contractor as it is for the user. Zans 200 conforms fully to the requirements set forth in the National Fire Protection Association Standards 72A, B, C, and D. And it is listed by Underwriters' Laboratories, Inc., as a local, auxiliary, remote station, and proprietary system control unit.

System operation.

Primary operating power for the system is obtained from one side of 120/240 volt, 60 Hz., single-phase, three-wire system or one phase and neutral of a 120/208 volt, 60 Hz, three-phase, four-wire sys-

tem. Trouble signal power is obtained from the second side or second phase of the power source.

The system may be powered by an optional standby battery power supply upon failure of the primary power source. The standby battery is kept fully charged by a charger in the control unit. Under normal conditions the AC2 lamp on the front of the cabinet is illuminated, indicating that the trouble signal power supply is present.

Failure of the primary power and/or an open or ground fault on the master box circuit, the alarm initiating circuits, alarm indicating circuits or a burned out zone lamp will energize the trouble buzzer and the TROUBLE lamp. The audible trouble signals may be silenced by operating the BUZZ switch to the OFF position.

Correction of the fault condition will automatically energize the audible trouble signals until the BUZZ switch is returned to the NORM position. Operation of any of the control switches to the OFF position will also energize the trouble buzzer and TROUBLE lamp.

Actuation of any alarm initiating device will energize and lock in the following:

1. The alarm indicating device circuit.
2. The master box circuit.
3. The appropriate zone lamp.
4. The appropriate zone accessory contacts.
5. The common accessory alarm contacts.

The alarm indicating devices may be silenced by operation of the ALARM switch to the OFF position. Restoration of the control cabinet may be accomplished by operation

of the RESET switch following restoration of the alarm initiating device. The trouble signal circuit will remain energized until the master box trip has been reset.

The master box circuit may be disconnected by operating the MASTER BOX Switch to the OFF position.

Continuity of each zone initiating device circuit and its associated zone lamp may be checked by operating the NORM switch to the TR TEST position. Location of a fault condition by zones can be determined by operation of the switch to the TR TEST position.

The battery charger will maintain the optional standby battery power supply in a fully charged condition at all times. The standby battery may be charged at a high rate by operation of the BAT switch to the HI RATE position. When the standby battery is the sealed

nickel cadmium or lead acid type, the HI RATE charge is unnecessary and is jumpered out with a jumper plug when these batteries are used.

Zans 200 control units are available for both surface and flush mounting. Surface mounted units are available in two sizes, 14½" x 14½" x 4¼" deep for models with one and four zones, and 14½" x 29" x 4¼" for eight and twelve zone models. Units for flush mounting are 14" x 14" x 4" deep with 16" x 16" trim for one and four zone models, and 14" x 28" x 4" deep with 16" x 30" trim for eight and twelve zone models. Cabinets designed for both surface and flush mounting are supplied with five ⅞" x 1⅜" double knockouts on both top and bottom. Screw terminals are provided for all field connections. The control unit is finished in red enamel.

System accessories

A separate optional standby power source, such as vented lead acid batteries up to 30 ampere hours capacity may be used and can be charged directly from the Zans 200. Vented nickel cadmium batteries up to 17 ampere hour capacity may be used and can be charged directly from the Zans 200.

Sealed lead acid batteries with 5.0 ampere hour capacity may be used with the Zans 200 control unit in conjunction with the M1746-3 regulator which maintains the proper charging rate for the battery. The M1746-3 regulator can also be used with the .5 and 2.0 ampere hour sealed nickel cadmium batteries.

The M1746-3 is automatic and does not require the use of the Hi-Rate switch on the Zans 200 control unit. The Hi-Rate circuit must be jumpered out using the jumper plug provided with the control unit.

When standby power supplies are provided, a milliammeter should be plugged into the charging circuit of the control unit. A 0-100 MA is required for all vented nickel cadmium and lead acid batteries and sealed nickel cadmium, up to 0.5 ampere hours capacity. The 0-400 MA is required for sealed nickel cadmium batteries of 2.0 ampere hours capacity.

A separate optional Class A Circuit module may be installed in the Zans 200. The Class A Circuit module will provide operation of the Zans 200 with a single break in the initiating device circuit. A module is required for each initiating device circuit in the Zans 200.

Typical specifications

Note: sections in parenthesis are selective alternates

General

The contractor shall furnish and install a (non-coded) (common-coded), limited energy type fire alarm system known as Zans 200, manufactured by Gamewell.

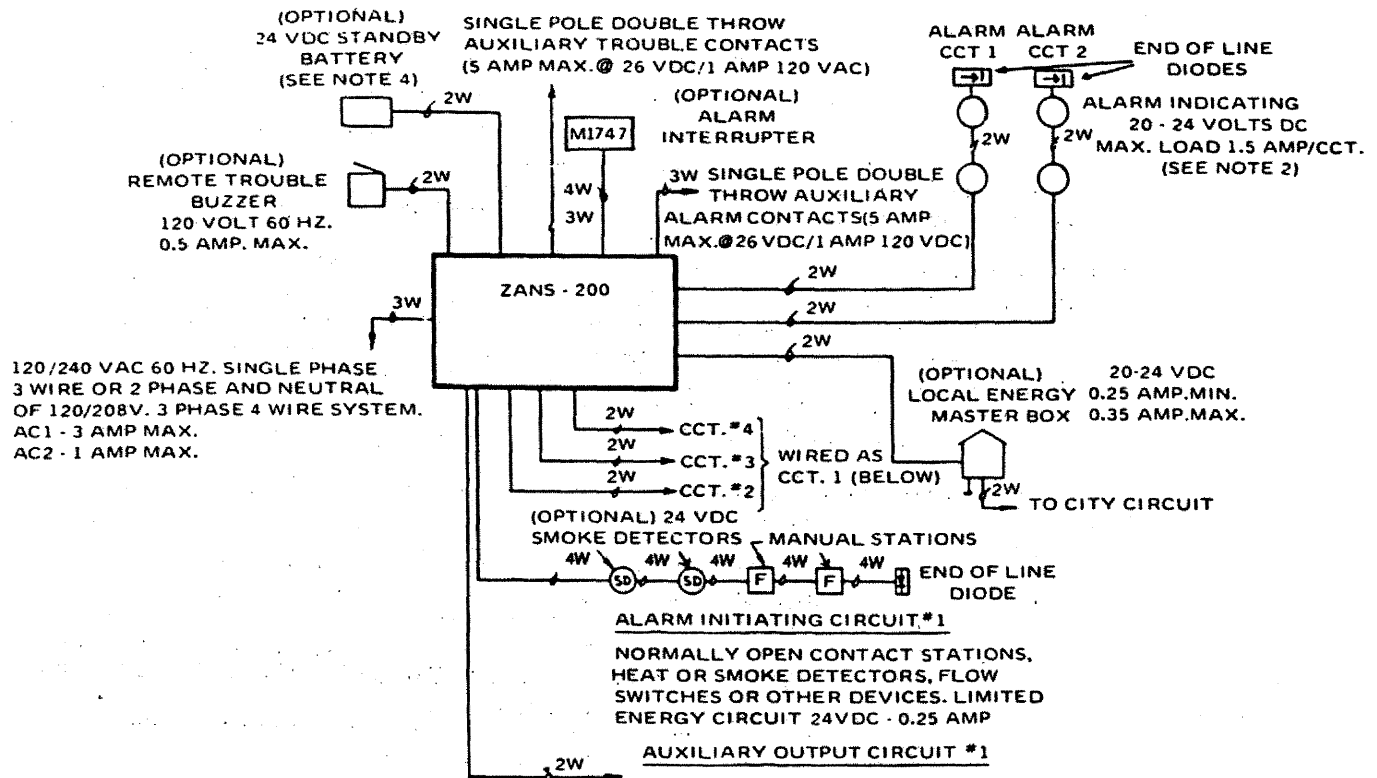
The system shall conform to the requirements set forth in the National Fire Protection Association Standards 72A, B, C, D. All equipment comprising the system shall be listed by Underwriters' Laboratories, Inc., as a (Local) (Auxiliary) (Remote Station) (Proprietary) System Control Unit.

System Operation

Actuation of any alarm initiating device shall sound all alarm indicating devices continuously until the system has been manually silenced by an ALARM OFF switch

or until the initiating device and control unit have been restored to the normal condition. During an alarm condition the associated supervised zone lamp shall be illuminated on the control unit. The system shall also be capable of operating a local energy Master Box, automatically transmitting fire information to the fire department. The Control Unit shall perform auxiliary control functions on a common or zoned basis as required. (See "Control Unit.") All alarm initiating circuits, alarm indicating circuits, and the Master Box trip circuit shall be supervised against the occurrence of a break or a ground fault condition in the field wiring. These conditions shall cause a trouble buzzer to sound in the control unit until manually silenced by the buzzer silencing switch. Tripping of the smoke supply circuit breaker or a burned out zone lamp will also energize the trouble buzzer. The trouble circuit shall be arranged for ring-back operation to prevent switch disarrangement during normal supervisory conditions. The system shall also have the capability of indicating the specific alarm initiating zone in the trouble condition.

Primary operating power for the system is obtained from one side of a 120/240 volt, 60 Hz, single phase, 3-wire system or one phase and neutral of a 120/208 volt, 3 phase, 4 wire system.



NOTES:

1. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH ARTICLE 210 OF THE APPLICABLE N.F.P.A. PAMPHLET 72.
2. IF SMOKE DETECTORS ARE USED, THE TOTAL ALARM CAPACITY OF 3.0 AMPERES MUST BE DECREASED BY THE AMOUNT OF CURRENT CONSUMED BY THE DETECTORS.
3. AREA ALARM DEVICES SHOULD BE INSTALLED TO COMPLY TO ARTICLE 240 OF THE APPLICABLE N.F.P.A. PAMPHLET 72.
4. A PRIMARY BATTERY MAY BE USED FOR TEMPORARY EMERGENCY OPERATION AS ALLOWED BY N.F.P.A. PAMPHLET 72A (LOCAL SYSTEMS ONLY).
5. SYSTEMS HAVING NO CONTINUOUS EXTERNAL LOAD WILL REQUIRE 0.5 AMPERE HOUR BATTERY FOR UP TO 60 HOURS STANDBY.
6. IN A SYSTEM WITH A GROUNDED POWER SUPPLY (IN WHICH THE GND. TERM. IS GROUNDED AS SPECIFIED IN ARTICLE 250 OF THE N.E.C.) ANY SUBSEQUENT GROUND ON ANY SUPERVISED EXTERNAL CIRCUIT WILL CAUSE A TROUBLE INDICATION. IN A SYSTEM WITH AN UN-GROUNDED POWER SUPPLY, A SINGLE GROUND ON THE BOX CIRCUIT OR THE ALARM CIRCUIT WILL NOT PREVENT AN ALARM.

Control Unit

The control unit shall provide . . . (one, four, eight, or twelve) zones for alarm initiating devices, two fused 24VDC circuits for alarm indicating devices, a local energy Master Box trip circuit, a battery charging circuit, a trouble buzzer, an overcurrent protected 24VDC circuit for smoke detector power, isolated normally open accessory alarm contacts from each zone, and separate isolated single pole double throw contacts for both common alarm and trouble conditions.

Shall provide means to supervise a remote lamp annunciator. An open filament or break in any annunciator line shall cause a trouble signal in the control unit.

Mounted on the control unit door shall be supervised zone lamps, a system trouble lamp and an AC supervisory lamp. All circuit components within the control unit, except the power transformer, and

terminal block for AC connections shall be mounted on a printed circuit card. All relays shall be plug-in type with plastic dust covers. Receptacles shall be provided for plugging in an optional voltmeter and milliammeter which shall be provided when rechargeable batteries are utilized with the system. Receptacles shall be provided for plugging in an optional milliammeter for indicating initiating circuit supervisory current.

The alarm initiating circuits shall be of the low voltage, limited energy type arranged for operation from normally open contact devices connected (to a two-wire circuit with end-of-line diodes) (to a four-wire circuit which will transmit signals to the control unit with a single open or ground fault on the circuit). Each initiating circuit shall operate with 30 ohm loop resistance and the circuit wires, including the associated zone lamps, shall be supervised.

The battery charging circuit shall

consist of a fixed high rate, and an adjustable trickle rate. The high rate shall be fixed at 0.5 ampere.

The Standby Power System shall utilize vented lead-acid or nickel cadmium batteries or sealed lead-acid or nickel cadmium batteries and a voltage regulator, and shall be capable of powering the system for as long as 60 hours as indicated by NFPA Pamphlet 72B and C.

Six switches shall be provided within the control unit.

A MASTER BOX switch — when operated to the OFF position will prevent the Master Box from being tripped during testing of the system. The system trouble circuit shall be energized while the switch is in the OFF position.

An ALARM switch — when operated to the OFF position shall disconnect power to the alarm indicating device circuits. The system trouble circuit will be energized while the switch is in the OFF position.

A BAT switch — when operated to

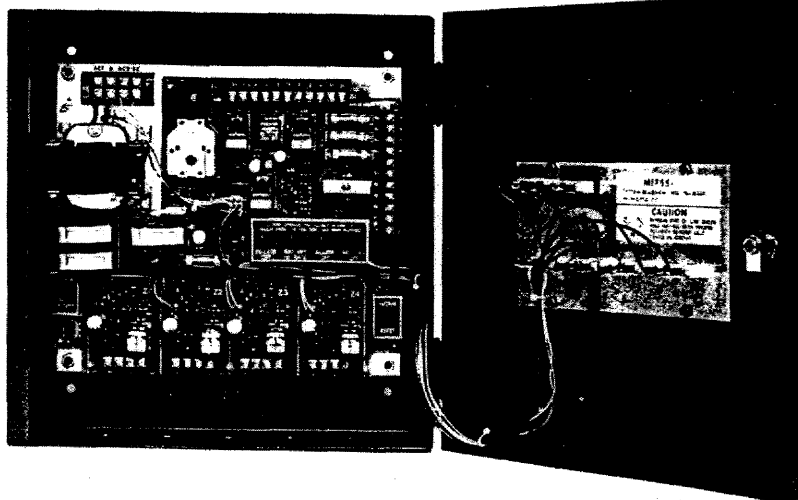
DATA SHEET 1651

the HI RATE position shall cause the standby battery to charge at approximately a 0.5 ampere rate. The system trouble circuit shall be energized while the switch is in the HI RATE position.

A BUZZ switch shall be provided for silencing the trouble buzzer whenever the system trouble circuit is energized. After correction of all the conditions which cause energization of the trouble circuit, the trouble buzzer shall resound until the BUZZ switch is returned to the NORM position.

A RESET switch shall reset the system and smoke detectors after an alarm. The system shall lock in until reset.

A TEST switch shall be provided to check the continuity of each



initiating device circuit by lighting the associated zone lamp. This switch shall serve as a lamp test

and also to identify the affected circuit when a zone trouble condition is indicated.

Ordering Information

Model No.	Description	Model No.	Description	Model No.	Description
M1755-1	Zans 200 Control Unit 1 zone, Surf. Mounted	28839	Door & Trim Assb., 1 or 4 zone, Flush Mounted	67933	12 volt sealed lead acid 5 AH
M1755-4	Zans 200 Control Unit 4 zone, Surf. Mounted	28839-1	Door & Trim Assb., 8 or 12 zone, Flush Mtd.	M1747	Interrupter
M1755-8	Zans 200 Control Unit 8 zone, Surf. Mounted	Accessory Equipment			
M1755-12	Zans 200 Control Unit 12 zone, Surf. Mounted	49704	Voltmeter 0-50 VDC	28926	Class A Initiating Circuit Module
28923-1	Chassis and front panel, 1 zone	50048	Milliammeter (0-100 MA)	50228	Milliammeter (0-400) for 2AH sealed nickel cadmium batteries
28923-4	Chassis and front panel, 4 zone	M1746-3	Standby Pwr System	50507	Milliammeter (0-30 MA) for supervisory meter (1-4 zones)
28923-8	Chassis and front panel, 8 zone	50231	12 volt sealed nickel/cadmium battery 0.5 AH	50508	Milliammeter (0-50 MA) for supervisory meter (8 zones)
28923-12	Chassis and front panel, 12 zone	50232	12 volt sealed nickel/cadmium battery 2.0 AH	50509	Milliammeter (0-75 MA) for supervisory meter (12 zones)
28838-4	Backbox, 1 or 4 zone, Flush Mounted			66195	Lightning Arrestor
28838-3	Backbox, 8 or 12 zone, Flush Mounted				

Gamewell



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Medway, Massachusetts 02053
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Gamewell, Inc. 
228A Milvan Drive, Weston, Ontario M9 L2A5
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Listed By U.L.C.
3570.5m.10/82 Printed in U.S.A.

DATA SHEET 1655



Accessories for ZANS 200 Fire Alarm Control Unit

Application

Provides a standby power source either for Gamewell Zans Control Units or the Gamewell Radio Master Box interface Control Units. The system is connected to the charging circuits of the control units during normal operation, and supplies power to the control units during a primary power failure.

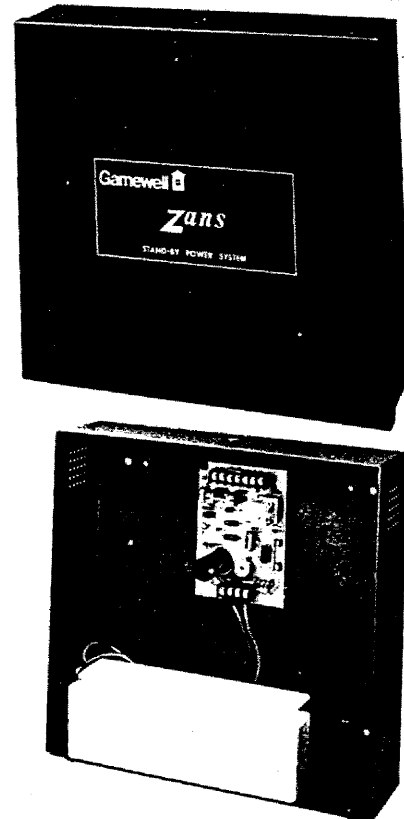
General

The Standby Power System consists of a voltage regulator and a bank of storage batteries in a ventilated, surface-mounted metal enclosure measuring 14 1/4" high x 14 1/4" wide x 4 1/4" deep.

The batteries (shipped separately) are mounted in the bottom on the enclosure. Sealed lead acid batteries are conservatively rated at 5 ampere-hours. Sealed nickel cadmium batteries are rated at 2.5 or 0.5 ampere-hours.

When maintained according to recommended procedures, the batteries will provide a trouble-free standby source for powering either the Gamewell Zans Control Units or the Gamewell Radio Master box Interface Control Units during power failures as long as 60 hours, as indicated by N.F.P.A. Pamphlet 72B. A milliammeter supplied with control units indicates the charged state of the batteries.

The Standby Power System regulated voltage output is factory set to provide the correct voltage to the batteries. The charge switches allow for variations in the regulator output voltage level for lead acid batteries. The charging is fully automatic when nickel cadmium batteries are used.



Standby Power System

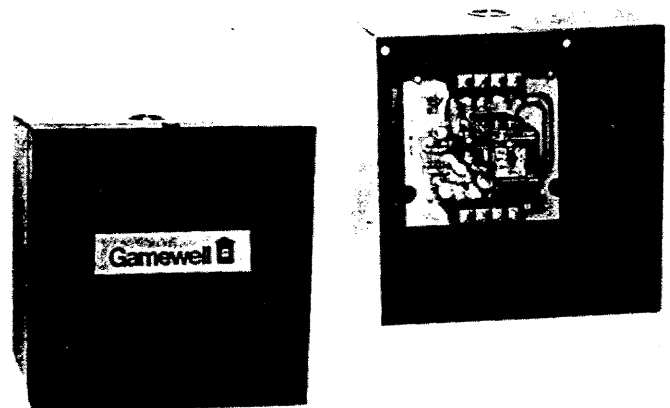
Application

Connects to the alarm circuit of the Zans Control Unit to create a coded audible signal by interrupting the circuit in march-time sequence or other desired interrupted sequences. Timing can be adjusted from a 0.25-second-ON/0.25-second-OFF cycle to a 1.50-second-ON/1.50-second-OFF cycle.

General

The Alarm-Circuit Interrupter consists of a solid-state timing device on a printed circuit board, housed in a surface-mounted metal enclosure measuring 7" high x 7" wide x 4" deep. The interrupter should be mounted above and within three feet of the control unit.

Optional two-circuit alarm accessory contacts (one normally-open, one normally-closed) that follow the signaling contacts are available for operating accessory devices. These contacts are rated for 10 amps at 120 VAC.



Alarm-Circuit Interrupter

DATA SHEET 1655

CLASS-A INITIATING CIRCUIT MODULE

APPLICATION

Converts each two-wire initiating device circuit of the Zans Control Unit to a four-wire Class-A circuit. The module permits an alarm to be initiated with a single open in any one of the four conductors of the circuit.

GENERAL

The Zans Class-A Initiating Circuit Module consists of a solid-state device on a printed-circuit board, with locating tabs provided for insertion under the initiating-device-circuit terminal screws on the control unit. A separate module is required for each initiating device circuit. Since an end-of-line diode is included on the Class-A Circuit Module, the diode normally used with each initiating device is not used.

ORDERING INFORMATION

MODEL NO.

DESCRIPTION

M1746-3

Standby Battery Cabinet and Regulator for sealed lead acid batteries 67933 - or - sealed Nickel cadmium batteries 50231 and 50232.

M1747

Alarm-Circuit Interrupter

28926

Class-A Initiating Circuit Module for zones 1, 2, 3, 4, and 9, 10, 11, 12.

67933

12 volt, 5AH sealed lead acid battery.
(2 needed per system)

50231

12 volt, 0.5AH sealed Nickel cadmium batteries. (2 needed per system)

50232

12 volt, 2.0AH sealed Nickel cadmium batteries. (2 needed per system)



7 Industrial Park Road
Medway, Massachusetts 02053
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Listed By Underwriters' Laboratories, Inc.

3032.2.5M.6/81 Printed in USA

MAX 0.025 AMP TRICKLE RATE
MAX 1.0 AMP HIGH RATE
24VDC BATTERY
STAND-BY POWER SUPPLY
(SEE NOTE 4)

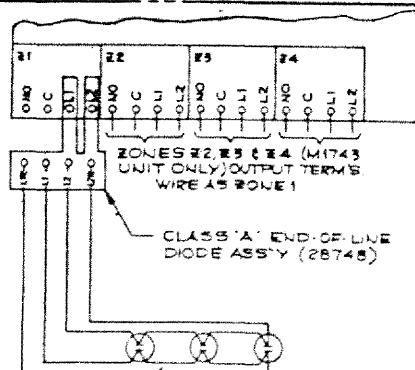
REMOTE TROUBLE BUZZER
120 VAC 60Hz 0.5AMP
MAX (IF REQ'D)

120/240VAC 60Hz SINGLE PHASE 3 WIRE OR
2 PHASE AND NEUTRAL OF 120/208V 3-PHASE
4 WIRE SYSTEM (SUPERVISED BY CONTROL UNIT)

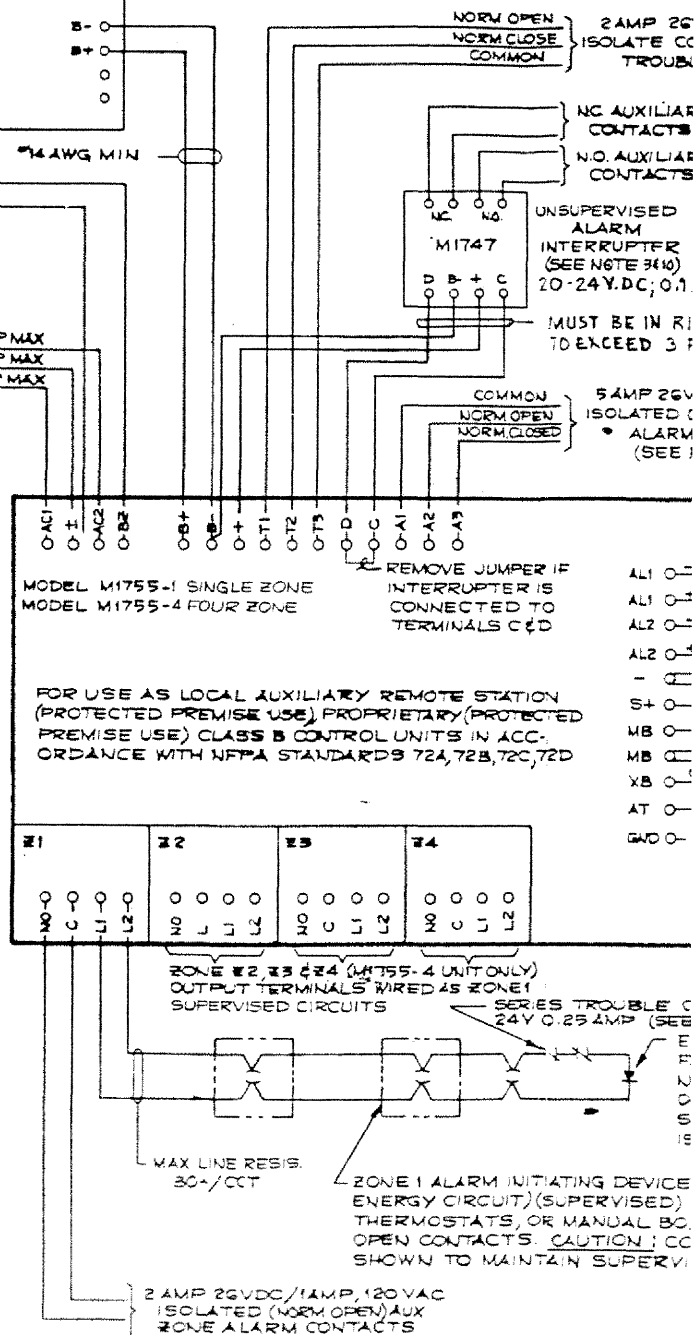
FOR INSTALLATION DATA SEE DS168-7

NOTES:

1. ALL FIELD WIRING MUST BE IN ACCORDANCE WITH ARTICLE 210 OF THE APPLICABLE N.F.P.A. PAMPHLET 72.
2. THE TOTAL ALARM LOAD OF 3.0 AMPERES MUST BE DECREASED BY THE AMOUNT OF CURRENT REQUIRED TO POWER SMOKE DETECTORS OR OTHER EXTERNAL LOADS SUCH AS ANNUNCIATORS.
3. THE INTERRUPTER SHOULD BE MOUNTED SO THAT ALL CONNECTIONS BETWEEN THE CONTROL PANEL AND THE INTERRUPTER ARE ENCLOSED IN RIGID CONDUIT NOT EXCEEDING THREE FEET IN LENGTH.
4. A PRIMARY BATTERY MAY BE USED FOR TEMPORARY EMERGENCY OPERATION AS ALLOWED BY N.F.P.A. PAMPHLET 72A (LOCAL SYSTEMS ONLY). IF A PRIMARY BATTERY IS USED, JUMPER SHOULD BE REMOVED FROM JACKS J4 AND J5 ON THE PRINTED CIRCUIT BOARD. REFER TO DS168-7 FOR OTHER BATTERY OPERATIONS.
5. ALL TROUBLE CONTACTS OF SMOKE DETECTOR WHICH INDICATE LAMP FAILURE MUST BE LOCATED BEYOND LAST ALARM INITIATING CONTACTS. EACH CIRCUIT MUST HAVE AT LEAST ONE MANUAL ALARM STATION.
6. IN A SYSTEM WITH A GROUNDED POWER SUPPLY (IN WHICH THE GND TERMINAL IS GROUNDED AS SPECIFIED IN ARTICLE 250 OF THE N.E.C.), ANY SUBSEQUENT GROUND ON THE INITIATING, INDICATING OR MASTERBOX CIRCUITS WILL CAUSE A TROUBLE INDICATION. IN A SYSTEM WITH AN UNGROUNDED POWER SUPPLY, A SINGLE GROUND ON THE INITIATING CIRCUIT OR THE ALARM CIRCUIT WILL NOT PREVENT AN ALARM.
7. IF SEPARATE METERS ARE SUPPLIED, THEY SHOULD BE PLUGGED IN PROPER MOUNTING CUPS PER DS168-7 AND AS INDICATED ON PRINTED CIRCUIT BOARD. BEFORE INSTALLING MILLIAMMETERS, REMOVE JUMPERS SHUNTING METER.
8. END-OF-LINE DIODE ASSEMBLY APPLIED ONLY TO ACTIVE CCTS. USING SUPERVISED ALARM DEVICES. IF A CCT. IS TO BE SPARE OR UNSUPERVISED DEVICES ARE USED, DIODE ASSEMBLY IS TO REMAIN ACROSS (AL) TERMINALS.
9. CONNECT A 20-24 VDC 0.2 AMP MAX AUDIBLE SIGNAL DEVICE AS SHOWN WHEN INSTALLING A LOCAL ALARM SYSTEM WITH WATER-FLOW ALARM INITIATING DEVICES.
10. WHEN THE ALARM INTERRUPTER CABINET M1747 IS USED THE ALARM SIGNAL IS CODED.

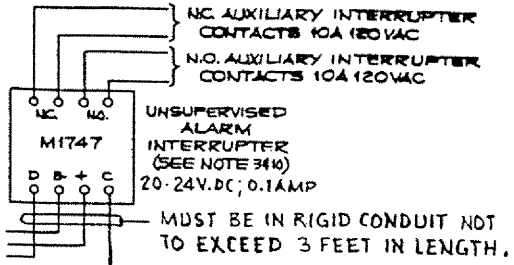


WIRING FOR OPTIONAL CLASS 'A' EOL DIODE ASSEMBLY



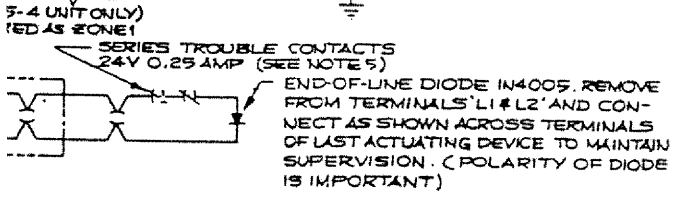
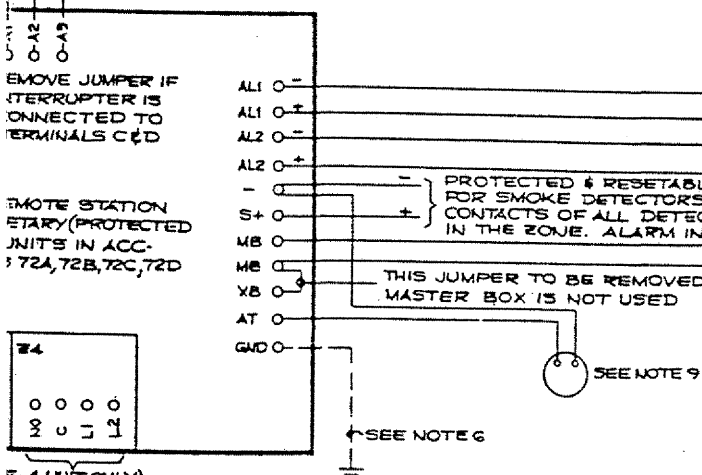
NORM OPEN
NORM CLOSE
COMMON

2 AMP 26VDC 5A 120VAC
ISOLATE COMMON AUXILIARY
TROUBLE CONTACTS

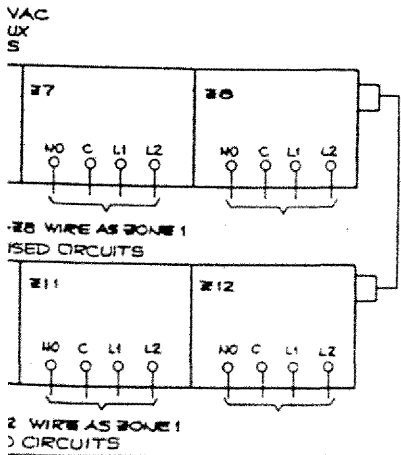


COMMON
NORM OPEN
NORM CLOSED

5 AMP 26VDC 1A/120VAC
ISOLATED COMMON AUXILIARY
ALARM CONTACTS
(SEE FIGURE "1")



21 ALARM INITIATING DEVICE CIRCUIT (LIMITED
CIRCUIT) (SUPERVISED) 24V 0.25 DETECTORS,
THERMOSTATS, OR MANUAL BOXES HAVING NORMALLY
2 CONTACTS. CAUTION: CONNECT DEVICES AS
SHOWN TO MAINTAIN SUPERVISION. (SEE DS167-3)



END-OF-LINE DIODE IN4005. REMOVE FROM TERMINALS
'AL1+' AND 'AL1-' (AL2+ AND AL2-) AND CONNECT AS SHOWN WITH
PROPER POLARITY ACROSS TERMINALS OF LAST ALARM DEVICE
(SEE NOTE 6)

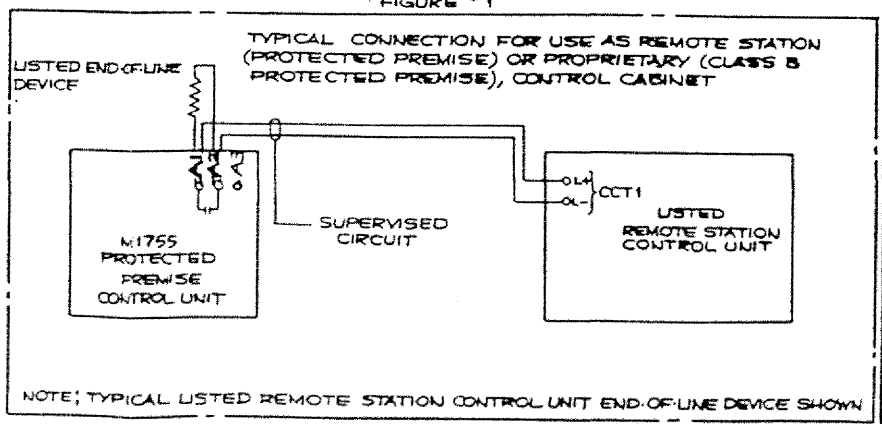
SUPERVISED
24 VDC ALARM CIRCUITS
(SEE NOTE #2 & DS167-3)
MAX LOAD 1.5 AMP/CCT
20-24 VDC ALARM INDICATING DEVICES
0.5 AMP VIBRATING HORNS
MAX 3/CCT
OR
0.2 AMP VIBRATING HORNS
MAX 7/CCT
OR
0.1 AMP VIBRATING BELLS
MAX 13/CCT
OR EQUIVALENT

TO MAINTAIN SUPERVISION, EACH ALARM INDICATING
DEVICE MUST CONTAIN IN4005 DIODE AS SHOWN

MAX LINE RESISTANCE 10~

LOCAL ENERGY CITY MASTER BOX
WIRING 4-1650 SURFACE
4-5764 FLUSH
COIL 14.5 OHMS
0.025 AMP MIN
0.035 AMP MAX } 20-24VDC
TRIP CIRCUIT IS A
SUPERVISED CIRCUIT

FIGURE "1"



WIRING, ZANS 200 FA SYSTEM
USING MODEL M1755 CONTROL UNIT
INTEREQUIPMENT LAYOUT

DRAWN BY *[Signature]* CHECKED BY *[Signature]* DATE *4/4/78*

APPROVED BY *[Signature]*

GW Gamewell
A BELL & HOWELL
SYSTEMS COMPANY
1000 BROADWAY, NEW YORK, N.Y. 10003

D-W497-9

GAMEWELL

ZANS 200 FIRE ALARM INSTRUCTIONS

WIRING _____

MODEL _____

CONDITION	SYSTEM STATUS
NORMAL	"AC2 ON" PILOT IS LIT, ALL ZONE LAMPS AND SYSTEM TROUBLE EXTINGUISHED, ALL SUPERVISED CIRCUITS NORMAL
ALARM	ZONE LAMP LIT, ALARM DEVICES SOUND, AUXILIARY MASTER BOX IS TRIPPED. ALARM DEVICES CAN BE SILENCED BY PLACING THE "ALARM" SWITCH IN THE "OFF" POSITION.
ALARM RESET	1. RESTORE INITIATING DEVICE TO NORMAL 2. OPERATE "RESET" SWITCH, ZONE LAMP GOES OUT. 3. RESET MASTER BOX TO NORMAL (If Equipped) 4. RETURN "ALARM" SWITCH TO NORMAL, BUZZER SOUNDS. 5. RETURN "BUZZER" SWITCH TO NORMAL, BUZZER SILENCES, SYSTEM IS RESTORED TO NORMAL.
ALARM OFF, LOCAL SYSTEM WITH WATER-FLOW DEVICES	OPERATION OF THE ALARM SWITCH TO THE "OFF" POSITION WILL SOUND A SEPARATELY CONNECTED AUDIBLE DEVICE.
"TROUBLE" LAMP ON BUZZER SOUNDING	FAILURE OF PRIMARY AC POWER, OPEN ZONE OR ALARM CIRCUIT, UNSET MASTER BOX, GROUNDED ZONE OR ALARM CIRCUIT, GROUNDED MASTER BOX, ANY SUPERVISORY SWITCH IN THE "OFF" POSITION, "BAT" SWITCH IN THE "HI-RATE" POSITION.
"TROUBLE" LAMP ON, BUZZER SILENCED	"BUZZ" SWITCH IN "OFF" POSITION.
"TROUBLE LAMP ON BUZZER SWITCH IN "OFF" POSITION	TROUBLE CONDITION CLEARED, RETURN SWITCH TO "BUZZ" POSITION.
LAMP TEST	OPERATE "NORM" SWITCH TO "TR TEST" POSITION, ALL ZONE LAMPS AND TROUBLE LAMPS SHOULD LIGHT, REFER TO DS168-7 FOR TROUBLE SHOOTING. ALL ZONE LAMPS EXTINGUISHED DURING LAMP TEST INDICATES A LOSS OF POWER.
FOR SERVICE CALL:	NAME _____ ADDRESS _____ TELEPHONE _____

ATTENTION: These instructions should be placed in a suitable frame and mounted adjacent to the control.

GAMEWELL ENGINEERING DATA SHEET
ZANS 200 INSTALLATION INSTRUCTIONS

1. Securely fasten the control cabinet to the wall in a clean dry accessible location where it will be readily seen by the Fire Protection Personnel.
2. Connect all conduit to the control cabinet.
3. Run all wires to the control cabinet as shown on the System Wiring Diagram.
4. Be sure that the control cabinet is cleared of wire and metal chips.
5. Remove the control equipment chassis and lamp panel from the shipping carton. Place the chassis and the lamp panel on the mounting studs in the control cabinet, making sure that the chassis is mounted with the transformer located in the upper left hand corner.
6. Secure the control equipment chassis to the mounting studs using the No. 10 lockwashers and nuts furnished in the cloth bag. Do not tighten nuts all the way.
- 6a. When flush mounting cabinet is furnished, mount the flush cabinet front to the cabinet with toggle nuts and screws furnished in the cloth bag.
7. Cut and remove rubber band and remove foam wrapping from the lamp panel.
8. Place the lamp panel on the four screws located on the back of the hinged door. Secure with No. 6 lockwashers and nuts furnished in the cloth bag.
9. Tighten all nuts on the lamp panel and control equipment chassis.
10. The cable from the lamp panel to the control equipment chassis must be secured to the cabinet using the cable clip furnished in the cabinet. Insert the cable thru the clip opening. Before closing the cable clip be sure there is enough slack in the cable to ensure that the hinged door will open fully without undue strain on cable.
11. Connect all field wires according to the System Wiring Diagram.

GAMEWELL ENGINEERING DATA SHEET

ZANS 200 NON CODE FIRE ALARM SYSTEM USING MODEL M-1755 - CONTROL PANEL

Interequipment Wiring: D-W497-8, D-W497-9

Data Sheet: DS168-8

Installation

The control cabinet should be securely fastened to the wall in a clean dry accessible location where it will be readily seen by the fire protection personnel.

Caution: The control cabinet and control equipment chassis should be installed per Data Sheet DS168-8.

Each panel should be externally wired according to the interequipment wiring diagram. Caution should be exercised that all external circuits are connected as shown to maintain supervision. The associated end of line diodes for the zone and alarm circuits must be removed from their line terminals (L1 - L2 and AL1, AL2) and connected in parallel with last device on each circuit as shown on the interequipment diagram.

The 'S' output will provide power to a limited number of smoke detectors up to 1.2 amperes at 20-24 VDC. This output is protected by a circuit breaker (A1CB) which meets the limited energy requirements of the N.E.C. The system trouble circuit will be energized in the event the circuit breaker is opened. Refer to the system interequipment wiring diagram for loading limitations.

The wiring should conform to the requirements of the National Electric Code and local codes, taking care that the line resistance or line voltage drop limitations as indicated on the interequipment diagrams are not exceeded.

If the city master box is not connected to the control panel the jumper between terminals MB and XB should be removed.

The Control Unit is designed to be used with a multiplicity of 24 VDC Standby Battery Combinations. A jumper plug, inserted in Jacks J4 and J5 is furnished with the control unit. Its correct location for the type of Standby Battery used is designated in the following battery and charging chart.

1. Twelve cells (24 volt) of vented lead acid batteries. The jumper plug should be inserted in Jacks J4 and J5. The recommended trickle charge is between 0.5 milli-amperes to 1 milliampere for each ampere hour of battery capacity. The maximum Ampere-Hour capacity of the battery used should not exceed 20 AH.
2. Two 12 volts sealed EXIDE EMF-5 batteries in an M1746-0 Stand-By System enclosure. The jumper plug should be inserted in Jacks J4 and J5. The trickle charge potentiometer R6 should be its mid point position of the Zans unit. Consult Data Sheet DS27-33 for the operation of the M1746 Stand-By Power System.

3. Two 12 Volt sealed Nickel Cadmium batteries in an M1746-1 or M1746-2 Stand-By System. The jumper plug should be inserted in Jacks J5 and J6. The position of potentiometer R6 is unimportant. Consult Data Sheet DS27-35 for operation of the M1746-1 or M1746-2 Stand-By Power System.

4. Four 6 Volt Dry Batteries. The jumper plug should be removed from the panel and stored for possible use with a future rechargeable battery system. The potentiometer R6 of the ZANS unit has no function.

If meters are furnished with the cabinet they should be inserted in the clips provided taking care that the proper meter is inserted in the proper position. Before a DC milliammeter can be installed the jumper wire across the associated clips must be removed, (cut from the board).

Drills and Tests

Caution: If this system is connected to the city by means of a Local Energy Master Box, the MASTER BOX switch must be placed in the OFF position before conducting any tests or drills, using a Station or a Drill Switch connected in a Signal initiating circuit. After the drill or test, the alarm conditions must be removed and the system RESET before the MASTER BOX switch is restored to normal.

A Drill or Test can be conducted by operating a Manual Station or Special Drill Switch.

Control Switch and Lamp Operation

Under normal conditions with power on the cabinet, the AC2 lamp should be the only lamp lighted and there should be no audible alarms. If supplied, the voltmeter (M1) should indicate about 20 volts; the milliammeter (M2) should read the trickle charge to the Stand-By Battery; zone milliammeter (M3) will read the supervisory current in the initiating circuits, see interequipment wiring chart for normal readings.

The BUZ switch is provided for silencing the trouble buzzer when there is a trouble condition or disarrangement of the system. When the trouble condition has been cleared and the buzzer resounds, restoration of the BUZ switch to Normal will again silence the buzzer.

The BAT switch when thrown to the HI RATE position causes the Stand-By battery to be charged at a rate of approximately 0.5 amperes. The system trouble circuit will be energized while the switch is in the HI RATE position. If the control unit is connected to a M1746-1 or 2, HI RATE Charging is Automatic and this switch should be left in the normal position (up).

The ALARM switch when thrown to the OFF position will prevent the audible indicating devices from sounding, the alarm signal will be transferred to the AT terminal output and will sound any 20-24 VDC 0.2 AMP audible device. This output is necessary when the control panel is used as a local system control unit having sprinkler system waterflow devices connected to it. The system trouble circuit will be energized while the switch is in the OFF position.

The MASTER BOX switch when thrown to the OFF position will prevent the master box from being tripped during testing of the system. The system trouble circuit will be energized while the switch is in the OFF position.

The TEST switch when operated checks the continuity of each initiating device circuit by lighting the associated zone lamp. This feature not only serves as a lamp test but also identifies the affected circuit when a zone trouble condition is indicated. Operating this switch also energizes the trouble circuit.

The RESET switch serves to reset the system as well as any latched in smoke detectors after an alarm condition. The trouble circuit will be energized while the switch is operated.

The amber TROUBLE lamp when lighted indicates any disarrangement of the system or an OFF NORMAL position of one of the control function switches.

The white AC2 ON is the only lamp that is normally lighted and indicates presence of the trouble buzzer supply on the cabinet.

The red ZONE lamp when lighted, indicates the zone that the alarm has initiated from.

Optional Equipment

A 0-50 volts meter (M1) and/or milliammeters (M2,M3) can be ordered as optional equipment for plugging into the clips provided. The voltmeter will indicate that voltage is being supplied to the system by the AC supply or by the DC standby battery.

A 0-100 milliampere meter should be ordered for all control panels using vented lead acid standby batteries or for control panels used with the M1746-0 (lead acid), or M1746-1 (0.5 AH Nickle Cadmium) Standby System units. A 0-400 milliampere meter should be ordered for system used with the M1746-2 (2.0 AH Nickle Cadmium) Standby System units. This meter should be plugged into the (M2) meter position.

Milliammeter (M3) for supervising zone initiating circuit current must have the following value 0-30ma -4Zone System; 0-50ma -8 Zone System; 0-75ma -12 Zone System.

System Operation

Alarm condition - When an alarm condition occurs due to the closure of the normally open contacts of the alarm initiating device, (smoke or heat detector manual alarm station, etc.) the individual zone lamp will light, the zone relay will be energized and latch in. The auxiliary zone relay contacts will close to indicate the operated zone location.

The common alarm relay will be energized to trip the city master box and the alarm relay that will provide power to the audible alarm circuits. The contacts of the alarm relay connected to the common auxiliary alarm indicating circuit terminals A1, A2, and A3 will transfer to their alarm position.

When the alarm condition has been removed the RESET switch should be momentarily operated. The zone and common alarm relay will restore to normal. The trouble circuit will be energized until the city master box trip unit has been reset by operating the trip handle (inside the city box) clockwise until SET.

SYSTEM TROUBLE SHOOTING AND MAINTENANCE INFORMATION.

When a trouble condition occurs as evidenced by the trouble buzzer and/or lamp and actuation of any devices connected to the common trouble output contacts (terminals T1, T2, and T3) all switches should be checked that they are in their Normal condition. If an alarm condition has occurred and the system has been reset, an Unset City Master Box will result in a system trouble condition. An open in the alarm circuit wiring of alarm circuits 1 and 2 or an open circuit breaker A1 CB will also result in a system trouble condition.

1. The TEST switch should be operated momentarily and the zone lamps on the cabinet door should be observed. If all zone lamps are lit, the trouble condition is not in the individual zones but is due to a switch not restored, an open in the alarm circuit wiring or a tripped circuit breaker A1 CB, a tripped city master box or an open master box condition (if no master box is furnished, the brass jumper between terminal XB and MB must be removed), the common circuits should be checked for grounds.

2. If, when the TEST switch is operated, a zone alarm lamp does not light, the trouble condition is due to fault condition associated with the zone(s) whose lamps fail to light.

This symptom can be due to any of the following causes:

- a. Removal or poor seating of the zone relay.
- b. Failure of the zone alarm lamp.
- c. An open or grounded zone alarm initiating circuit.

The first trouble can be located by a visual check of the relay.

To determine whether the fault is with the lamp or the external circuit, disconnect the lamp and measure its resistance. An alternate method is to use a DC voltmeter (0-50 V range). Connect the negative lead of the meter to the (B-) terminal and the positive lead to the lamp terminals one at a time.

If the voltage reading between B- and the two lamp terminals is the same the lamp is good. If the reading varies markedly at the two terminals the lamp unit should be replaced.

If the lamp unit is good, the wires should be removed from the L1 and L2 terminals and the resistance from each wire to ground should be measured as well as the resistance between wires. If the resistance measurement between wires indicates a high resistance or open circuit the meter leads should be reversed to confirm the reading as the end-of-line diode will indicate a very high resistance when measured in one direction. An open circuit condition can be due to a faulty smoke detector or power failure to the smoke detector (s).

3. If when the TEST switch is operated none of the zone lamps light, a loss of power is indicated.

If the lamps for all the zones to which smoke detectors are connected do not light, the A1 CB breaker probably has tripped. It can be reset by depressing its plunger after the short circuit has been cleared.

If either a Voltmeter or Charging Milliammeter (M2) are supplied with the cabinet, loss of reading will indicate loss of AC power.

A DC loss of power to the S+ terminal feeding the Smoke Detector circuit can be caused by tripping of the A1 CB breaker. It can be reset by depressing its plunger. The system trouble circuit will be energized whenever the circuit breaker is tripped.

Failure of the AC2 ON lamp being extinguished.

Maintenance

The TEST switch should be operated at least once every two weeks. All lamps should light including the TROUBLE LAMP.

The condition of the standby battery should be checked at least monthly. The HI RATE charge is factory set for 0.5 amperes. The Trickle charge Rate was factory adjusted for 15 Milliampers and controlled by resistor R6.

If the GND terminal is connected to a good earth ground, a ground occurring on any external circuit will give a trouble signal.

ZANS 200

Spare Parts List

Part Number

AC2 Lamp	49942
Trouble Lamp	49746
Zone Alarm Lamp	50017
A1 K1 Relay (Power Transfer)	50016
A1 K2 Relay (Common Alarm)	67429
A1 K3 Relay (Trouble)	49673
K1 Zone Relay	67243
Fuse, 2 Amp	41417
Rectifier, Bridge	67208
Buzzer, Trouble	50510
Meter, 0-50 Volts	49704
Meter, 0-100 Milliamperes	50048
Transformer	50516
Meter, 0-400 Milliamperes	50228
Plug, Shorting	50161
Meter, 0-30 Milliamperes	50507
Meter, 0-50 Milliamperes	50508
Meter, 0-75 Milliamperes	50509