# Gamewell
### WORLDWIDE

# ZNS

## MICROPROCESSOR BASED CONVENTIONAL FIRE ALARM CONTROL PANEL

## Installation & Operation Manual

**PROPRIETARY MATERIAL**

**The information contained in this manual is proprietary to The Gamewell Company.  Such information and technical drawings may not be copied or reproduced in any manner, or disclosed to organizations that might be competitive to Gamewell, without the express prior written consent of The Gamewell Company.**

## GENERAL INFORMATION

The Gamewell Company thanks you for choosing the ZNS Microprocessor based fire alarm control panel. As with all our products we have taken great care to insure that we have provided a quality product. To receive maximum benefit and many years of reliable service we would like to make the following recommendations:

1. **Read this manual carefully** and in it's entirety before proceeding with the installation of the ZNS panel.

2. **Never** make any connections **with the power connected.**

3. Gamewell spends many hours testing devices that are supplied by Gamewell to be used with it's control panels to verify compatibility. **To maximize system performance, and minimize risk of damage to the equipment, we suggest using all Gamewell Components.**

4. **There is no substitute for proper maintenance and testing** of this or any life safety product. Gamewell recommends testing and maintenance of your ZNS in accordance with the guidelines set forth by the National Fire Protection Association, to be done on a regular basis, as a minimum.

5. **This manual should be stored with the ZNS panel** for future reference, and should not be removed, providing reference to the operation and programming of the installed ZNS

Thank you again for choosing Gamewell. If you have any comments regarding your ZNS panel or other Gamewell products, please feel free to contact us at:

**The Gamewell Company**
**Product Marketing Department**
**60 Pleasant Street**
**Ashland, MA 01721**

# TABLE OF CONTENTS

# GAMEWELL ZNS

**This manual covers the installation, programming and service of the ZNS and its related modules. It is a supplement to the INS-2 Installation and Programming manuals (P/N's 70708-05 and 70709-04).**

## OVERVIEW

**Description**

The ZNS is a microprocessor based conventional Fire Alarm Control Panel. It is designed to monitor 2 to 32 conventional initiation zones and also allows 2 circuits of addressable detection or control devices. The main control panel consists of an addressable INS-2 system.  Addition of an ZNS Common Module provides connection to the conventional zone modules.

## INSTALLATION AND WIRING

**Mechanical**

Two cabinet sizes are available for the ZNS the smaller is used to house a 2 to 16 zone system and the larger is used on 2 to 32 zone systems.
21"W x 25.5"H x 4"D  (1 to 16 zones)
21"W x 31.5"H x 4"D  (2 to 32 zones)

The ZNS Common Module (p/n 31014) mounts in place of the INS-2 expander module and plugs into the J5 connector. It is connected to the p/n 31015 Zone Mother Board modules. Each mother board accepts two p/n 31016 two zone Conventional Input Module.  Refer to drawings A-M1104, D-M780 and D-M781 for mechanical layout.

**Wiring**

Both high or low current  zone should be wired in accordance with NFPA 70, article 760. Maximum loop resistance should not excede 25 ohms. Refer to wiring diagram A-W544 for terminations.

# COMMON CARD

**Indicators**
The ZNS common card module has one LED. When first powered it flashes the version number of the firmware on the ZNS module. Thereafter it will flash whenever it is responding with zone information to an INS-2 poll.

**Default Operation**
Default operation is a mode that allows alarms to be sensed and automatically routed to the Signaling Circuits, if for some reason the ZNS controller fails.

**Auxiliary Power**
Auxiliary power is available on the Common Card from terminals A+, A-. Resetable smoke detector power is available from terminals S+, S-. This power is removed for four seconds when the system is reset. Combined total current available from both A+,A- and S+,S- is 0.5 amps.

**Programming**
The ZNS Common Card is enabled by accessing level 4 programming area of the INS-2 main board. Press the F1 key until the LED above the F1 key is illuminated.

Output controller location C220 must also be enabled and cannot be used by any other devices. This output controller location allows the ZNS common card to reset the S+, S- output.

# ZONE CARD

**Indicators**
Each 2 zone module has two LED's per zone, one to indicate alarm and the other to indicate trouble.  The standard zone module has a red and yellow, the supervisory zone has two yellow LED's.

**Alarm Disconnect**
Each zone of the 31016 2 zone card has a disconnect switch located next to the LEDs. When this switch is activated, the zone will not report an Alarm, but it will show that it is in Trouble

**Low /High Current Operation**
Each zone of the 31016 2 zone card can be programmed for two modes of operation, low current and high current. The module is factory set as a high current zone. Low current mode is selected by removing the following resistors.

|  | Odd Zone | Even Zone |
|---|---|---|
| Resistors to remove for low current operation. | R1,R2,R3 | R21,R22,R23 |

The EOL resistor high current value is 4.7K ohms and the low current value is 15K ohms.

**NOTE:** Low Current zones will not function with 2-wire Smoke Detectors, and should be used with contact closure devices only.

**Addressing**
The 31016 zone modules must be mounted from left to right. If a slot is empty the system will not detect  modules beyond the first open slot.

**Zone Programming**
Each 31016 2 zone card has jumpers to distinguish between Class A or Class B initiating circuits. There are also jumpers to program latching and non-latching zones. All 31016 modules are factory set for Class B latching alarm operation. See the chart below for programming options. Refer to drawing A-M1105 For resistor locations.

**Programming**   Programming of the 31016 modules is accomplished with the INS-2 laptop software. Each zone card installed requires 2 addresses regardless of wether both zones are being used or not. The 31016 requires no programming of its address. It is addressed automatically, via the ZNS, by its physical location to the addresses of 1 through 32. Additional addressable modules may be added to the addressable circuits 1 and 2 starting with address 33.

## JUMPER PROGRAMMING

|  | Odd Zone | Even Zone |
|---|---|---|
| **Alarms Latched** | W1L  Installed | W2L  Installed |
| **Alarms Not Latched (Supervisory Alarms Only)** | W1L Removed | W2L Removed |
| **Class B** | W1A  Installed | W2A  Installed |
| **Class A** | W1A Removed | W2A Removed |

Zone cards are shipped with all jumpers installed (Class B, Alarms Latched).

**Power Requirements**   The ZNS common card draws 2 mA from the +24V supply and 5 mA from the +5V supply.

The 31015 mother boards do not draw any power from the system.

Each 31016 zone card draws 0.5 mA from the +5V supply plus 6.5 mA for each trouble or alarm LED on.  Note that for one zone, the trouble and alarm LEDs will never be on at the same time.

The current draw from the +24V supply for each zone on a 31016 zone card depends upon whether it is configured for hi-current or low current operation.

| | |
|---|---|
| lo-current -- without detect | 2.5 mA max |
| lo-current -- in alarm | 6 mA max |
| | |
| hi-current -- without detectors | 6.5 mA max |
| hi-current -- with detectors | 9.1 mA max |
| hi-current -- in alarm | 60 mA max |

# APPENDIX A

## ZNS High Current Compatibility Identifier - 31016

| Detectors | | | Bases | |
|---|---|---|---|---|
| Gamewell Model No. | Apollo Part No. | Qty. | Gamewell Model No. | Apollo Part No. |
| 71033 | 55000-350 | | 71036 | 45681-200 |
| 71034 | 55000-250 | | 71086 | 45681-220 |
| 71035 | 55000-150 | 20 | 71086-LOW | 45681-232 |
| 71035-160 | 55000-151 | | 71086-GREEN | 45681-231 |
| 71035-210 | 55000-152 | | 71086-RED | 45681-230 |
| | | | 71393 | 45681-227 |
| 71443 | 55000-380 | 10 | | |

## Appendix A (Cont)

## Compatible Notification Devices

| Part # | Catalog # | Part # | Catalog # | Part # | Catalog # |
|---|---|---|---|---|---|
| 70871 | MIZ-24-R | 71562 | SR-24110-HFR | 71717 | RSSP-24110W-FR |
| 70873 | MIZ-24-W | 71569 | RSP-241575-VFR | 71727 | AS-2415C-FW |
| 71138 | MT-12/24-R | 71573 | AMT-12/24-R | 71728 | AS-2430C-FW |
| 71140 | MT-24-WM-VFR | 71574 | AMT-24-LS-VFR | 71729 | AS-2475C-FW |
| 71287 | MIZ-24-LS-VFR | 71575 | AMT-24-IS-VFR | 71730 | RSS-2415C-FW |
| 71288 | MIZ-24-LSM-VFR | 71576 | AMT-24-LSM-VFR | 71731 | RSS-2430C-FW |
| 71289 | MIZ-24-MS-VFR | 71614 | MT4-12/24-R | 71732 | RSS-2475C-FW |
| 71290 | MIZ-24-IS-VFR | 71616 | SR-2475-VFR | 71733 | RSSP-2415W-FR |
| 71292 | MT-24 -LS-VFR | 71679 | AS-2415W-FR | 71736 | ET70-2415W-FR |
| 71293 | MT-24-LSM-VFR | 71680 | AS-241575W-FR | 71737 | ET70-241575W-FR |
| 71294 | MT-24-MS-VFR | 71681 | AS-2430W-FR | 71738 | ET70-2430W-FR |
| 71295 | MT-24-IS-VFR | 71682 | AS-2475W-FR | 71739 | ET70-2475W-FR |
| 71426 | MT-24 -SL-VFR | 71683 | AS-24110W-FR | 71740 | ET90-2415C-FW |
| 71427 | MT-24-SLM-VFR | 71684 | AS-24100C-FW | 71741 | ET90-2430C-FW |
| 71543 | AS-2415-VFR | 71685 | NH-12/24-R | 71742 | ET90-2475C-FW |
| 71544 | AS-241575-VFR | 71686 | NS-2415W-FR | 71743 | ET90-24100C-FW |
| 71545 | AS-2430-VFR | 71687 | NS-241575W-FR | 71744 | E70-2415W-FR |
| 71546 | AS-2475-VFR | 71688 | NS-2430W-FR | 71745 | E70-241575W-FR |
| 71547 | AS-24110-HFR | 71689 | NS-2475W-FR | 71746 | E70-2430W-FR |
| 71548 | SM-12/24-R | 71690 | NS-24110W-FR | 71747 | E70-2475W-FR |
| 71549 | DSM-12/24-R | 71691 | RSS-2415W-FR | 71748 | E70-24110W-FR |
| 71550 | RS-2415-VFR | 71692 | RSS-241575W-FR | 71749 | E90-2415C-FW |
| 71551 | SR-2415-VFR | 71693 | RSSP-241575W-FR | 71750 | E90-2430C-FW |
| 71552 | SRP-2415-VFR | 71694 | RSSP-2430W-FR | 71751 | E90-2475C-FW |
| 71553 | RS-241575-VFR | 71695 | RSS-2430W-FR | 71752 | E90-24100C-FW |
| 71554 | SRP-241575-VFR | 71696 | RSSP-2475W-FR | 71758 | CH90-24-W |
| 71555 | SR-241575-VFR | 71697 | RSS-2475W-FR | 71759 | CH70-24-R |
| 71556 | RS-2430-VFR | 71698 | RSS-24110W-FR | 71760 | CH70-2415W-FR |
| 71557 | RSP-2430-VFR | 71699 | RSS-24100C-FW | 71761 | CH70-241575W-FR |
| 71558 | RSP-2475-VFR | 71711 | AH-24WP-R | 71762 | CH70-2430W-FR |
| 71559 | RS-2475-VFR | 71712 | RS-2415W-FR | 71763 | CH70-2475W-FR |
| 71560 | RS-24110-HFR | 71713 | RS-241575W-FR | 71764 | CH70-24110W-FR |
| 71561 | SRP-24110-HFR | 71714 | W3MT-24-VFR | | |

# APPENDIX B
## Drawings