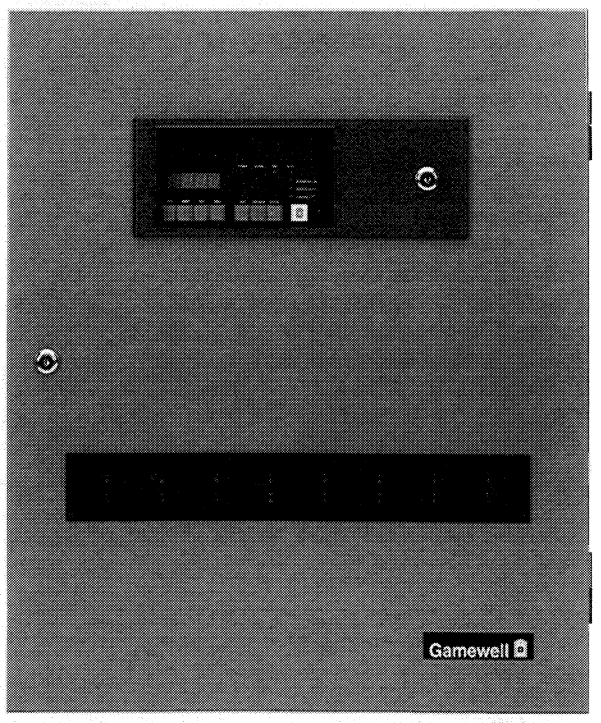
Gamewell WORLDWIDE

Data Sheet 360

Zone Network System (ZNS)



- Micro-processor Addressable Technology with Individual Conventional Zone Alarm/Trouble Annunciation at the Panel
- Expandable in 2 zone increments (up to 32 zones) using snap-in modules
- Optional Alphanumeric Display and/or Remote Alphanumeric and Printer Interfaces
- Compatible with the Full Line of INS-2 Addressable Input and Output Devices
- Default Alarm Mode (DAM) Allows Reporting During Microprocessor Failure
- Annunciation and Control of Alarm Trouble, Supervisory Functions by Point or Zone
- Two and Four Wire smoke detector compatibility
- Power Limited
- Fully Field Programmable, including Laptop Programming
- Interactive Digital Keypad with Guided Sequential Operation
- Password Access Protection
- Built in Panel Diagnostics
- Alarm Resound
- 24-Hour Trouble Reminder
- Alarm Event Buffer
- Trouble Status Buffers
- Point Identification Display
- Positive Alarm Sequence
- Signal Silence Inhibit
- Signal Time Limit Cut-out
- One Man Walk Test
- Alarm Verification
- Audio Modules Available for Mounting in the Same Cabinet
- Style 6 (Class A) or Style 4 (Class B) Network Communication Linesand Initiating Circuits
- Style Z (Class A) or Style Y (Class B) Signal Circuits
- UL Listed

Description

Gamewell's Zone Network System (ZNS) Control Panel combines conventional zone detection with the advantages of addressable technology. The ZNS provides flexibility to meet the most demanding application requirements in today's sophisticated buildings.

The ZNS is designed to monitor up to two Network Communication Lines. These Lines can be configured with up to 32 conventional zone modules in the ZNS cabinet; they also allow up to an additional 96 addressable inputs (smoke detectors, manual pull stations, waterflow devices, etc.) and 64 addressable outputs (controls relay). The Lines can support various devices (i.e. LED Annunciators, Alphanumeric Displays, Printers) in addition to the addressable inputs and outputs described above. These Lines can be configured for either Style 6 (Class A) or Style 4 (Class B) operation. The system architecture allows for T-tapping of the Style 4 (Class B) Lines for ease of installation.

The ZNS is available in two cabinet sizes; the smaller cabinet fits up to 16 conventional initiating zones; the larger cabinet can either be used for up to 32 zones or up to16 zones and optional audio modules. Both cabinets have mounting options for up to two cabinet-

mounted CE's or CZI's.

The ZNS System is fully field programmable. Utilizing a laptop-type computer and the Interactive Digital Keypad, the ZNS can be customized to meet your specific installation requirements. The IBM PC Compatible laptop plugs into a serial RS232 port that has been provided for easy connection to the Control Panel . This feature is designed to simplify installation, service, reconfiguration and maintenance. Field programmable capabilities include modification of zone, priorities, alarm verification by point, coded signaling (marchtime, zone, temporal), masterbox/ line reversal circuit, and control by event.

The ZNS System provides immediate identification of alarm locations via a four digit, seven segment LED display. This display indicates the type of signal and address of the signal's origin. An optional Interactive Alphanumeric Display Unit is available to provide English language annunciation of the system status (Alarm, Supervisory and Fault). The addition of an optional printer provides a hard copy of system activity.

The Interactive Digital Keypad allows you to perform basic system operations in both the normal and program modes. You are guided through the system operation by LED's which light in order to indicate available operations. The ZNS also offers password access protection for those environments requiring this security feature.

Event Annunciation

The annunciation of alarm , trouble and supervisory functions is indicated by point or group with the four digit, seven segment LED display. This display indicates the type of signal (i.e. "A" for Alarm, "S" for Supervisory, "F" for Fault/ Trouble) and the address of the signal's point of origin. The Status LED's indicate to the user whether the system is in Alarm, Supervisory or Fault condition. Additional status LED's include power on, service required, CPU failure, Bypass and operation in Day or Night mode.

You can also provide annunciation by point or zone of Alarm and Trouble status by utilizing the optional LED Annunciators and the alpha/numeric display. These Annunciators can be located either at the control panel or remotely on the Line depending upon the application.

Supervised Class A/B Network Communication Lines

The ZNS has two supervised Style 6 (Class A) or Style 4 (Class B) Network Communication Lines. These Lines are capable of supporting 32 conventional initiating zones and 160 addressable points (96 initiating, 64 control). The Line provides communication capability and operating power to all the elements connected to it, while supporting the alphanumeric annunciators, printers and LED annunciators.

Conventional Zones

The ZNS is configured with Zone Modules (ZM's), with each zone card providing 2 initiating circuits capable of driving up to 25 conventional type detectors per circuit. The ZM's are available in packages of two zones (ZM-2) or four zones (ZM-4). Another version of the ZM is available to provide one initiating alarm/trouble circuit and one supervisory circuit with two yellow LED's (ZM-1A1S). The ZM's come from the factory as Class B, high current, latching zones. The cards can be easily configured at the point of installation to change these setting to Class A, low current or non-latching zones in any combination by removing designated jumpers or clipping specified resistors on the board.

High current setting will drive up to 25 conventional Series 60 detectors (see Data Sheet 615) or one flame detector or duct detector or set of beam detectors. Low current settings will drive any number of contact-type devices (e.g., pull stations).

Each 2 circuit zone card plugs into a motherboard which has two 4 position terminal blocks to connect the zone wiring, Style D (Class A) or Style B (Class B). The ZM's electronic circuitry is designed to monitor the zone wiring for trouble and devices for alarm supervisory condition or common control.

When the ZM is in an alarm condition, the red alarm LED will be lit continuously and the state of the zone becomes latched until reset from the panel. Once the reset command is received, the zone and its devices will resume their quiescent mode of operation. In its trouble mode, the yellow trouble LED is lit continuously. A zone disconnect switch is provided for each zone.

Dual Mode Battery Charger

The system is supplied with a Dual Mode Battery Charger to insure maximum battery life. The Constant Current and the Float Voltage (trickle charge) modes are controlled by the system microprocessor which monitors battery voltage. The Constant Current is the fastest method in which to recharge a battery, while the Float Voltage (trickle) extends the battery life up to 50% because it prevents the battery from being overcharged. The Battery Charger will support either a sealed or vented, lead acid or nickel cadmium type battery set (or pack) up to 40AH. Consult manufacturer for proper mounting and installation instructions.

Alarm Verification

The Zone Network System is provided with Alarm Verification capabilities. With the ZNS, you can program individual detectors requiring alarm verification at the site. The Alarm verification feature reduces false or nuisance alarms by requiring two alarm signals to be transmitted within a time period prescribed by Underwriters Laboratories, before commencing with a general alarm condition. Alarm verification has been designed to reduce nuisance alarms created by short-term phenomena which affect smoke detectors.

Virtual Zoning

The Zone Network System can be programmed to provide Virtual Zoning of conventional zones and/or addressable points. Virtual Zoning allows for software grouping of particular points into a "zone ". These virtual zones can be used to simplify annunciation and control-by-event programming. This feature allows the user the advantage of added status information made available by the ZNS System, while at the same time maintaining the annunciation of this information as simply as possible to avoid confusion in the emergency situation.

Positive Alarm Sequence

Positive Alarm Sequence Interaction allows the user to set the ZNS operating sequence into the Day (occupied) or Night (unoccupied) modes of operation.

In the Day, or occupied, mode of operation, the ZNS will begin the control-by-event sequences programmed to activate upon receipt of a first alarm condition. If the panel is acknowledged within a specified period of time (T1) (Field Programmable), a second timer (T2) will begin to time out. If the panel is reset before expiration of T2, the panel will issue to all initiating and the control points a rest command and return to normal position. If either timer expires before physical interaction, the ZNS will initiate general alarm sequences. Devices such as manual stations and waterflow alarms may be programmed

to initiate general alarm sequences without being delayed by the timers. In the night, or unoccupied, mode of operation, the alarm will bypass all timers and place the panel in a general alarm condition.

The purpose of the timer sequences in the Day (occupied) mode is to allow for investigation in order to confirm the emergency situation. This feature has become integral to Gamewell's strategy against false alarms.

Signal Circuits

The ZNS System is provided with two Style Z (Class A) or Style Y (Class B) signal circuits. The signal circuits are rated at 2 amps 24VDC. The circuits are individually field programmable to remain active until acknowledged or reset and to provide steady, coded and/or marchtime signaling.

Operation

The Zone Network System is designed to monitor, report and control points connected to the control panel via the Network Communication Line. The Line provides the user with the proven stability of multiplex technology along with the installation savings inherent in combining both conventional and addressable type systems in one panel.

Conventional Zone Modules at the panel are automatically assigned address 1 thru 32, based on the position of the zone in the cabinet.

Addressable devices are addressed by the ZNS Control Panel. In the program mode, the ZNS outputs addresses from a list entered via the laptop unit. Each address is sequentially placed on the Line and waits to be programmed into the devices with the help of the installer. Once the device is programmed, the next address is transmitted.

Initial programming of the ZNS is accomplished through the use of a laptop computer. A menu driven program walks you through the initial programming requirements, whereby, the project specific information is entered. This can be done off line from the ZNS and later loaded when the project is ready to be brought online.

The ZNS responds to alarm and trouble conditions by providing address/zone annunciation. The ZNS also guides the user through the steps required to respond to the event by flashing LED's to indicate the next step required at the control panel. As an example, if an alarm from initiating device 20 were reported, the systems would be placed in an alarm condition. The Common Alarm LED would light and device number 20 preceded by an A would be displayed on the integral four digit, seven segment LED display. The LED above the Acknowledged Switch would also flash indicating the need to depress this button next. The Alarm Acknowledge LED would continue to flash at a noticeably slower rate until all alarms had been acknowledged. Once all the alarm(s) are acknowledged, the Reset LED would then flash indicating the need to reset the ZNS and return the system to normal operation.

Under quiescent conditions, the Power on LED will be the Only LED active. The keys provided for normal operation of the system (acknowledge, reset, drill, day) are also used as function keys for programming of the ZNS in programming and test modes.

The ZNS also monitors the onboard MPU to ensure that the microprocessor is operating. If there should be a failure of the microprocessor, the CPU Fail LED will flash. In this situation, the Default Alarm Mode takes over control of the system. The ZNS will function as a Conventional General Alarm System in the Default mode. The system is also equipped with a Default Relay (Form C) which is activated under an alarm condition via the Default Alarm Mode. Detailed operation and programming instructions are available in the ZNS manual.

ZNS System Capacities

- Two Style 6 (Class A) or Style 4 (Class B) Network Comm. Lines
- Up to 32 Conventional Zone Modules with Alarm/Trouble Annunciation at the panel
- Up to 96 Addressable Initiating Devices
- Up to 64 Addressable Control Elements
- Up to 8 Optional Alphanumeric Display/Printer Interfaces
- Up to 12 Eight Zone Remote Annunciators

Optional Displays

The ZNS has the capability of adding optional display units. Each Alphanumeric Display/Printer interface is fully field programmable to display any of the status information available. Each optional alphanumeric display or printer is fully supervised, providing system status and English text read-out of alarm and trouble location(s).

Eight Zone Remote Annunciators are also available which provide LED status annunciation of points or " zones " on the system. As with the alphanumeric and printer driver, these units are also fully field programmable to display any necessary information. The Alphanumeric Displays, Printers, and Eight Zone Remote Annunciators are interfaced to the ZNS via the Network Communication Line. You may have up to 16 compatible INS-2 Alphanumeric or Printer Interfaces per system and up to 24 eight point Annunciator Modules per system. Please refer to the Alphanumeric and Annunciator Module data sheet (#336) for additional detailed information.

Technical Specifications

ZNS Control Panel:	Input Power	120 Vac @ 3 Amps Max. 50/60 Hz
	Operating Power	24 Vdc @ 6 Amps
	Battery Requirements	24 Vdc, 5-40 Ampere Hours
	Alarm Output Power	4 Amps 24 Vdc Nominal (unregulated)
	Operating Temperature	0° C to 49° C
	Humidity	85%, non-condensing
	Addressable Peripheral Power	2 Amps Max. @ 24 Vdc (regulated)
	Control Panel Quiescent (no zones)	120 mA
Backbox Dimensions:	- Up to 16 Zones	21"W x 25.5"H x 4"D
	- Up to 32 Zones or w/Audio	21"W x 31.5"H x 4"D
ZM Module Power Requirements (per zone):	High Current Quiescent	8.5 mA plus detectors
	Low Current Quiescent	4.0 mA plus contact devices
	High Current Alarm	50 mA max
	Low Current Alarm	7 mA max

Ordering Information

Supplied	QTY	Model	Part #	Description
☐	_____	ZNS-04		ZNS Basic System with four conventional A/B Initiating circuits
☐	_____	ZNS-06		ZNS Basic System with six conventional A/B Initiating circuits
☐	_____	ZNS-08		ZNS Basic System with eight conventional A/B Initiating circuits
☐	_____	ZNS-10		ZNS Basic System with ten conventional A/B Initiating circuits
☐	_____	ZNS-12		ZNS Basic System with twelve conventional A/B Initiating circuits
☐	_____	ZNS-14		ZNS Basic System with fourteen conventional A/B Initiating circuits
☐	_____	ZNS-16		ZNS Basic System with sixteen conventional A/B Initiating circuits

NOTE: An Expanded (two row) cabinet for mounting audio modules is available for 4 thru 16 zone systems; add E to the part number (the Expanded cabinet is standard for systems over 16 zones - with zone modules occupying the second row):

☐	_____	ZNS-04E		ZNS Expanded System with four conventional A/B Initiating circuits
☐	_____	ZNS-06E		ZNS Expanded System with six conventional A/B Initiating circuits
☐	_____	ZNS-08E		ZNS Expanded System with eight conventional A/B Initiating circuits
☐	_____	ZNS-10E		ZNS Expanded System with ten conventional A/B Initiating circuits
☐	_____	ZNS-12E		ZNS Expanded System with twelve conventional A/B Initiating circuits
☐	_____	ZNS-14E		ZNS Expanded System with fourteen conventional A/B Initiating circuits
☐	_____	ZNS-16E		ZNS Expanded System with sixteen conventional A/B Initiating circuits
☐	_____	ZNS-18		ZNS System with eighteen conventional A/B Initiating circuits
☐	_____	ZNS-20		ZNS System with twenty conventional A/B Initiating circuits

NOTE: For systems larger than 20 zones, order a ZNS-20 and the appropriate number of additional zone modules.

☐	_____	ZM-2		Two conventional initiating zones with motherboard, mounting guide and all necessary hardware included.
☐	_____	ZM-4		Four conventional initiating zones with motherboard, mounting guide and all necessary hardware included.
☐	_____	ZM-1A1S		One conventional Alarm initiating zone and One Supervisory zone with motherboard, mounting guide and all necessary hardware included.
☐	_____	ZM-2A2S		Two Zone cards, each containing One conventional Alarm initiating zone and One Supervisory zone with motherboard, mounting guide and all necessary hardware included.

☐	_____	30773-01		Local alphanumeric display / printer interface module for mounting in the ZNS cabinet
☐	_____	30773-02		Remote alphanumeric display and printer interface module
☐	_____	30773-03		Remote printer interface module
☐	_____	70842		Surface backbox for 30773-02 / 30773-03 remote alphanumeric display / printer interface module. 5.5"H x 19"W x 3"D (Flush mounting requires 70845 trim plate)
☐	_____	70845		Flush trim plate for 70842 backbox
☐	_____	30766		Remote 8 point mini annunciator, trouble and alarm per zone, includes white housing and LED's
☐	_____	30813		Control Element for mounting in the ZNS cabinet (max 2)
☐	_____	30770-10		Control Element (surface mounting - for flush mounting use with 70839 flush trim ring)
☐	_____	31018		ZNS Manual (Operators, Applications, Installation and Programming Guides)

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Data and design subject to change. Supply subject to availability GW 3/98 (revised) Printed in U.S.A.

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