

WHELEN[®] HIGH POWER VOICE & SIREN SYSTEMS

Non-discriminating Warning Products for Public & Industrial Applications!

How do you warn people of a tornado, hurricane, tsunami, flash flood or chemical release and get the proper response?

*The most effective way for warning the public is to issue a siren warning and follow it with a clear and powerful voice message. This two step approach, **ALERT** and **INFORM**..., will eliminate confusion, restore order and, most importantly, save lives.*



Tornado/Severe Weather Warning



Tornado/Severe Weather Warning



Tsunami Alert



Chemical / Industrial Facilities



SFC Harry Kulp, a Whelen employee currently serving with the US Army in Kuwait.

Military Bases



Nuclear Plant Protection



Community Firehouse Alert



Port Protection

"For 25 years our sirens have been voice-capable and able to operate in the absence of AC power".

MASS NOTIFICATION HIGH POWER VOICE AND SIREN

TO ALERT AND INFORM . . . with **WHELEN**[®]

How do you warn people of a tornado, flash flood or chemical release and get the proper response?

The most effective way for warning the public is to issue a siren warning and follow it with a clear and powerful voice message. This two step approach, alert and inform, will eliminate confusion, restore order and, most importantly, save lives.

Whelen produced the first reliable electronic high-power voice and siren system almost thirty years ago—the first major innovation in public warning in many decades. Today, Whelen offers a family of products that integrates outdoor and indoor warning into a single unified system. Whelen is the first name in public warning, with more High-Power Voice and Siren Systems installed worldwide than any other manufacturer.

Whelen High-Power Voice and Siren Systems serve many needs

- civil defense
- volunteer fire call
- county and municipal public warning
- industrial emergency warning
- employee alarm systems
- dam failure alerting
- prompt alert and notification for the nuclear power industry

Warning the public is a serious business. We do not compromise on quality and never will. Worldwide, community and industrial leaders turn to Whelen Engineering for the very best in public warning systems.

A single Source for Design & Manufacture

At Whelen Engineering, we believe that the very best products are those which are designed from the outset to work together as a system. We don't patch our system together using other manufacturers' products.

Low Frequency Warning Tones are the Most Effective

At Whelen, we use low frequency (300 hz to 700 hz) warning tones because tones in this range penetrate most background noise and carry to greater distances than higher frequency tones.

Only from Whelen, A Low Frequency Speaker Driver

Designed exclusively for outdoor warning applications, Whelen's 400 watt speaker driver dwarfs all other commonly used speaker drivers. For performance, reliability and longevity, this speaker driver has been tested and certified to a minimum twenty year life cycle for the Government of Denmark.



All Whelen Products are proudly made in the U.S.A.

The Electronics

We design our own state-of-the-art electronics to survive the harshest outdoor environments. Many components used in our systems (such as the power transistors found in our power amplifiers) are hand-graded and matched to ensure quality and long-term reliability.

All products must follow a rigorous quality assurance program that provides traceability from the purchase of individual electronic components to final acceptance testing of the complete siren.

All electronic components within our high-power voice and siren systems are modular in design. That way, they can be used for a wide variety of applications; from the single volunteer fire call siren to complete and fully integrated emergency and civil defense warning systems.

Detailed Product Information

Individual product sheets are available for the products highlighted in this brochure.

Professional Sales Team

A team of dedicated professionals is ready to assist with matching the right products to your application. Assistance is available for acoustic surveys and system planning.

Warranty

At Whelen Engineering, we not only design and manufacture the best warning systems available, we stand behind every product we make. For a copy of the best warranty in this business, our warranty, write to us.

If You're Interested

in the most reliable, most up-to-date warning systems and the service that comes with them, give us a call. Find out why Whelen Engineering is the first name in public warning.

Whelen Engineering's Charlestown, New Hampshire Facility



Whelen Engineering's Chester, Connecticut Facility



All Whelen products are made in the U.S.A. for use worldwide. We design and manufacture our systems at our plants in Chester, Connecticut and Charlestown New Hampshire.

Outdoor Warning Systems

All WHELEN® Siren Systems feature the following:

- Battery operation.
- Six warning tones: Wail, Whoop, Attack, Hi/Lo, Alert and Airhorn.
- Local control or radio control.
- Minimum 15 or 30 minute operation depending upon model.
- SI TEST® (patented by Whelen) confirms the operation of AC power, partial or full operation of both the power amplifiers and speaker drivers, and rotor operation of rotating models.
- Pre-assembled, pre-wired and tested at Whelen's Chester, CT facility.

NEW! 2900 Removable Speakers Assembly



The handle grip on removable siren driver...



With a firm hand grip the driver is eased out ...



as driver clears cell housing...



the driver is removed for servicing.

Whelen's 2900 Series have a new removable driver for easy "in the field" maintenance.

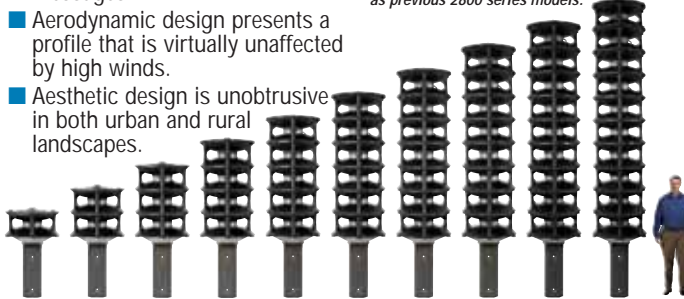
WPS2900 Series

New! Removable Driver

- Ten models to choose from, producing from 108dB to 126dB at 100'.
- Field-replaceable, 400 watt EZ-PULL driver eliminates distortion and power loss found in competitive systems using multiple drivers per cell.
- Speaker array, electronics cabinet & cabling included.
- Voice capable through live public address and prerecorded messages.
- Aerodynamic design presents a profile that is virtually unaffected by high winds.
- Aesthetic design is unobtrusive in both urban and rural landscapes.



Cell sizes shown in ratio to a person, the ten modules serve a variety of applications and have the same features and specifications as previous 2800 series models.



WPS4000 Series

- Rotating Siren.
- Voice and siren warning.
- Mass notification designed.
- "Long throw" warning at output power levels from 127db to 129dB at 100', sending tones and voice to distances beyond one mile.
- Speaker design features multiple high gain radial horns that enter into a single projector providing a controlled sound column of unequalled power and tone and voice clarity.
- Hard-wired connection between amplifiers and speaker drivers eliminates problems associated with conventional rotating devices that use brush ring commutators.
- Controlled vertical sound column minimizes exposure of high-level sound to persons at ground level near the siren station.
- One 400 watt driver is used per high gain radial horn.
- Heavy-duty, gear-driven rotor, with high-torque DC motor.
- Public Address Quadrant Control. The WPS-4000 speaker can be commanded by radio control to eight compass points for Public Address messages.
- Voice capable through live public address and prerecorded messages.
- Speaker array, electronics cabinet and cabling included.



VORTEX Series

Low-cost warning sirens yields reduced costs without cutting corners on quality, reliability and performance. These products are built with the same rugged power amplifiers and speaker drivers designed for outdoor warning and harsh environments which deliver powerful siren alerting without the problems associated with motor driven systems. VOICE MESSAGING IS **NOT AVAILABLE** WITH THE VORTEX SERIES.



VORTEX-R Series

Rotating Siren Series

- Rotating Series
- Output Power from 127dB to 129dB at 100'.
- Speaker design features multiple high gain radial horns that enter into a single projector providing a controlled sound column of unequalled power and tone clarity.
- Heavy-duty, gear-driven rotor.
- Economical alternative to the WPS-4000 series.



Voice Option / Live Public Address

- The WPS2900 and WPS4000 Series offer digital voice capability and live public address, standard.
- Optional Remote Station Digital Voice Module (RDVM) stores up to 16 prerecorded messages that may be activated by a brief radio command.
- 240, 480, or 960 seconds of recording time available. Select from the following options: RDVM240, RDVM480 or RDVM960.
- Custom messages relate to public warning situations appropriate to your community with your instructions.

HORNET Series

- Economical rotating siren with 6 distinct warning tones & SI TEST®. (Voice messaging not available.)
- Output power levels to 118dB at 100'.
- Speaker array, electronics cabinet and cabling included.
- Straight-forward design reduces cost without cutting corners.
- Maintenance-free rotor.
- Battery powered, operates despite AC failure.
- Two batteries of our recommendation will provide 30 minutes of full power alerting.
- Requires 1/2 the battery power needed by DC powered mechanical sirens.
- Temperature compensated battery charger, assuring that batteries are charged to 100% capacity in all seasons and any kind of weather.



OMNI-ALERT Series

- Economical alternative to the WPS2900 Series provides tone only warning (Voice messaging not available.)
- Four models, producing from 108dB to 118dB at 100'.
- Field-replaceable, 400 watt EZ-PULL driver eliminates distortion and power loss found in competitive systems using multiple drivers per cell.
- Speaker array, electronics cabinet and cabling included.



Solar Option (All Series)

- All Whelen sirens are engineered to accept a solar option.
- For use when AC power is not available.
- Maintains and replenishes the siren's battery supply.



Electronic Cabinet Assemblies

- An electronic cabinet assembly is furnished with each WPS, OA VORTEX, HORNET and SIPS Series System, appropriate to the speaker model selected.
- Cabinet assembly and reliable electronics are engineered and built to survive the harshest environments.
- Six warning tones are standard, Wail, Whoop, Attack, Hi-Lo, Alert, Airhorn. Alternate tone set is available for Industrial Applications.
- Live Public Address and Digital Voice Message capability in the WPS Series and SIPS Series.
- Local Controls, standard.
- Battery power source for a minimum of 30 minutes operation without AC power, standard in WPS Series.
- Optional one-way and two-way radio controls that are fast, secure and reliable.
- SI TEST[®], silent test feature, patented by Whelen, examines and confirms each warning system's operational capability without disturbing the public.
- Optional Remote Station Digital Voice Module, RDVM, stores up to 16 pre-recorded messages. Messages may be activated by a brief radio command.
- Pre-assembled, pre-wired and tested at Whelen's plant.

The Cabinet

Electronic cabinet assemblies for Whelen Series Systems are offered in a natural finish aluminum - eliminating the long term costs associated with maintenance painting and rust prevention. Cabinet assemblies consist of two or more compartments; the top compartment houses the system's electronics and the bottom compartment(s) houses the heavy-duty battery supply necessary to provide continuous siren and voice operation without AC power.

The Electronics

Field proven tough and reliable, Whelen's reputation for excellence, reliability, power, tone and voice clarity begins with its electronics. System electronics are mounted on swing-out panels inside the electronics compartment. All modules can be tested while they are on-line and working together as a system.



Type II Electronics Assembly detail.

Microprocessor-based Controller

Whelen's Electronic Siren Controller maintains precision control of the remote siren station, including tone generation, event timing and overseeing remote station operation.



Our Siren Systems are wind tunnel tested to insure performance in the most trying conditions.

Power Amplifier

Each cabinet assembly includes 1 to 10 power amplifiers, depending on the model selected. Power amplifiers feature rugged die cast construction, short circuit protection, current limiting, and individual fuse protection. LED service indicators are included to verify a complete circuit between each power amplifier and speaker driver. Providing effective voice communication at siren alerting ranges, Whelen power amplifiers increase their output by at least 25% when in the voice mode of operation.

Battery Charger

Designed for unattended operation, the battery charger maintains the system's batteries in a standby power mode. The battery charger is temperature compensated to ensure that batteries are charged to 100% capacity from the hottest summer day to the coldest winter night. The battery charger also features current limiting and a low battery voltage cutoff, which ensures safe and reliable operation.

In the event of a power failure, the battery disconnect circuit, a standard feature on all Whelen High-Power Voice and Siren Systems, takes all modules within the siren cabinet assembly off line (except for the Electronic Siren Controller and radio link). This reduces standby current consumption, conserving the battery supply for an emergency activation for up to two weeks following the loss of AC power.

Solar Regulator

For use when AC power is not available, Whelen's solar regulator works with appropriately sized arrays of solar panels to maintain and replenish the remote station's battery supply. The solar regulator is temperature compensated to provide optimum charging in all temperature conditions.



Whelen siren with Solar Regulator in the field.

One-Way and Two-Way Radio Controls

One-Way receiver decoder packages responding to Whelen's fast, secure and reliable COMM/STAT[™] communications protocol are available in most radio bandwidths. Two-Way remote station control and status monitoring packages, operating with Whelen's COMM/STAT[™] communications protocol and a 2-4 watt transceiver, are available in most bandwidths. Whelen's protocol is DTMF. This protocol is used today and has been used for years in communications. It is reliable and proven in communicating under adverse conditions. However, our equipment will also operate in many other formats, including FSK.

Diagnostic Silent Test, SI TEST[®]

Patented by Whelen, a means to fully test a remote siren station without disturbing the public, SI TEST[®] confirms the operation of AC power, DC power at operating levels, Partial or Full Amplifier/Speaker Driver Operation and Rotor Operation (WPS4000, VORTEX and HORNET Series).

Digital Voice

Whelen's Remote Station Digital Voice Module, RDVM, delivers distortion-free voice messages that are pre-recorded at the factory and optimized for power and clarity. Up to 16 variable length messages of 240 or 480 seconds may be stored on the RDVM board.



Our electronics assembly area is staffed with the most dedicated professionals in the industry.



Type II Siren Cabinet

Industrial Warning

Industrial warning systems may take advantage of all the warning tools that community based systems use: central station controls for activation and status monitoring, Mass Notification, All-Hazard Voice and Siren Systems, and alert monitor/message displays. In-plant, distributed speaker systems are often needed for indoor and other special applications. For these applications, Whelen offers two solutions: the IPS400/800 and the SIPS400/800.

IPS400/800, In-Plant System

The IPS400/800 contains within its two-compartment, natural finish aluminum cabinet; Electronic Siren Controller, one or two power amplifiers, a System Driver Board, two gel-cell batteries and battery charger.

- Siren and Voice warning may be distributed from the IPS400/800 to individual speakers within a building.
- Each 400 watt power amplifier has four 100 watt channels. Each 100 watt channel may be used with one 100 watt speaker driver or a combination of transformer coupled speakers of lower power.
- A wide variety of speakers are available, including special speakers for explosive atmospheres.
- The deployment of multiple IPS400/800 systems, typically managed by wireless control, offers significant savings compared to central amplifier systems.
- Six warning tones and public address, standard.
- Local controls, standard.
- Battery power source for up to 30 minutes of continuous operation, without AC power, standard.
- One-way and Two-way radio controls that are fast, secure and reliable.
- Optional Remote Station Digital Voice Module, RDVM, stores up to 16 pre-recorded messages of variable lengths. Standard message memory storage is 240 or 480 seconds. Messages may be activated by a brief radio command.

SIPS400/800

The SIPS400/800 incorporates all features available with the IPS400/800 and adds the capability of supervising peripheral devices, such as speakers and strobe lights, in an IPS application.

Two types of supervision are offered: end-of-line (EOL) supervision or device level supervision. EOL supervision is similar to fire alarm supervision. EOL supervision detects a break in the line between the speaker and amplifier unit.

Device level supervision monitors the operation of the individual devices (speakers or strobe lights) with the addition of a node to each device. If the device has a failure, an output relay closure signals the control cabinet of a fault. Finding a defective speaker or strobe within the system is easy with the SIPS400/800. The node for the faulty device will indicate failure with a visible illuminated LED.

Both types of supervision can be mixed in the same system.



Type I Cabinet

System Accessories for Supervised In-Plant Warning Systems



Model WS100TCC
Wide angle,
100 Watt Speaker with
weatherproof housing



Model WS30TC
Wide angle,
30 Watt Speaker



Model WS15TENC
Recessed mount 15 watt
speaker with grille



Model WSX60TC
Explosion-proof
60 Watt Speaker

Whelen Products are Pre-Assembled, Pre-Wired and Tested at our Facility to Ensure Product Quality & Reliability!



Testing Station



2900 Series Speakers Assembly



4000 Series Speakers Assembly



Type II Cabinet Assembly



Type III Cabinet Assembly



Repair Facility

BASE STATION EQUIPMENT

Whelen sets the standard in the industry for fast, secure and reliable one-way and two-way control and status monitoring products for public warning systems. Whelen's COMM/STAT™ 10/14 communication protocol is used in both our one-way and two-way base station products. DTMF signalling is standard. However, our equipment will also operate in many other formats, including FSK.

One-Way Controls

E-747 Encoder



Ideal for small systems, the E-747 encoder allows the activation of 1-10 systems, individually or as a group, and the selection of 18 different functions.

- Furnished in an attractive and compact desktop enclosure, the E-747 is perfect for use where space is at a premium.
- Membrane keypad features raised keys with tactile response.
- May be used for mobile applications.
- Microphone input.



RF Chamber.

E-969 Encoder



For medium to large-scale systems, the E-969 encoder provides for the control of up to 9,999 systems individually, in groups or as a system, and the selection of 35 functions. User friendly. Multi-step activation scenarios may be programmed into encoder's "Call Keys."

- LCD display presents command menu, address selections, "Call Key" programming information, and time of day and date in stand-by mode.
- Four "Call Keys" on keyboard provide simple and fast two-step activation of most warning scenarios. (Select "Call Key." Press Send.)
- Four additional "Call Keys" available. Two keys used for programmable time of day transmits such as NOON TEST; two keys are used for activation of a warning scenario via remote input. (Provides the ideal integration of local public warning system and our inplant system devices.)
- User programmable via keyboard entry or by personal computer via RS-232 port.
- Microphone input.

Two-Way Controls

E-2010 Central Station Control



Encoder/Decoder

The E-2010 simplifies the work involved in system activation and status monitoring. Control your siren systems individually, in groups, or as a system.

The E-2010 supports all of the features that are available in Whelen's High-Power Voice and Siren product line, from individual command selection to user programmed command scenarios or "Call Keys." With the selection of one Call Key, an operator may prompt the encoder to issue multiple commands.

With the included computer accessory software, you can connect the E-2010 to your PC for Windows® based programming and data archiving. Data is available through a Microsoft® ACCESS database.

- Four line by forty character backlit LCD display.
- Provides system accountability. Every transaction is logged with a time and date stamp. You can hard drive archive all siren activity.
- Selective printouts for status by siren location or date.
- Sixteen "HOT" Call Keys.
- Forty auxiliary Call Keys.
- Two time-of-day Call Key activators.
- Four remote input Call Keys.
- Automatic system polling.
- Internal alarm tone.
- Two contact closure outputs for alarms.
- Security keylock.
- Printer port.
- Battery backup for time and date features.
- Rugged membrane keyboard.
- Microphone input for public address.
- Desktop and rack mounted configurations available.

Indoor Warning

VA-2000



Alert Monitor and Message Display

The VA-2000 extends the reach of a warning system delivering urgent text-based information to homes, schools, hospitals, businesses, industrial facilities, government offices, and emergency vehicles.

Whelen's VA-2000 provides instant information that defines the emergency condition and prompts the correct response, eliminating confusion and saving lives.

When activated, the VA-2000 will sound a piercing alarm, flash a high intensity LED, and display one of up to 60 pre-programmed messages on an easy to read display. Messages remain on display until the unit is reset.

- Two line by 16 character backlit LCD display.
- Messages may be up to 96 characters.
- Displays up to 60 messages.
- Responds to Whelen COMM/STAT™ 10/14 DTMF protocol and other DTMF formats. May be activated individually, in groups or as a system.
- Available in most radio formats.
- Messages and activation codes are user programmable via personal computer.
- Audio option adds capability to receive live voice announcements via radio frequency. Option includes low power speaker, 600 ohm audio output and relay contact.
- Battery backup option provides 24 hours of standby capability in the event of AC power failure.

VA-300



Alert Monitor Instant Audible Emergency Information.

Expand the reach of your public warning system with the VA-300.

When disaster strikes, deliver urgent and critical emergency information directly to: homes, schools, hospitals, business/ industrial facilities, government offices, and emergency vehicles.

When activated, the VA-300 will sound a piercing alert tone for about 5 seconds, flash a high intensity LED and enable an audio speaker to monitor radio activity and close a relay.

- Simple and easy to use Clear & Test controls.
- Audio level adjustable.
- Continuously monitors local public warning system radio frequency and reacts the instant a live Public Address announcement or warning is transmitted.
- Commercial grade receiver.
- Responds to activation commands from Whelen's Series of DTMF base station controls. May be activated individually, in groups or by system "all call" in the same manner used for Whelen High-Power Voice and Siren Systems.
- Includes 1/2 Amp relay contact and internal antenna.
- External outdoor antenna, BNC antenna connector and local chassis mount antenna are optional.



Vortex™ and WPS4000 Series speaker arrays conform to very rigid & exact quality specifications.

Standing tall and vigilant, a Whelen WPS2905 Series 5 cell speaker array on duty 24/7 for warning protection from any hazardous situation that may suddenly arise.



Whelen Products are used by many communities in all types of industrial, commercial and residential applications.



Emmitsburg, Maryland



Abbeville, Alabama



Columbus, Georgia



Biloxi, Mississippi



Milford, Connecticut



Columbus, Georgia



Houston, Texas



La Plata, Maryland

WHELEN[®]
PUBLIC WARNING PRODUCTS

Outdoor Warning Systems... "In the Field"

Whelen Sirens still standing after Hurricane Katrina!

Keesler Air Force Base, Biloxi Mississippi, calls itself, "Home of the premier electronics and communications training center in the Air Force". Stationed here is the 81st Training Wing, its emphasis on electronics training. In addition to that, it houses the second largest medical facility in the Air Force, Keesler Medical Center.

Three days after the Base Realignment and Closure (BRAC) Commission voted to keep Keesler's Medical Center intact, Katrina hit it head-on. Sitting between the Gulf of Mexico and Biloxi Bay, the base sustained tremendous destruction, an estimated \$500 million in damages. While the majority of the damage was to their medical center and housing areas, all five WPS2805 and two WPS2801 Whelen sirens still stood afterwards, including the solar panels, with the in camera dated photos to prove it!

Photos below show Katrina damage done to base.



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Whelen Engineering Company, Inc. reserves the right to upgrade its products with design improvements without notification.
Tornado and weather photos courtesy of NOAA/NSSL, Keesler AFB photos courtesy of Keesler.