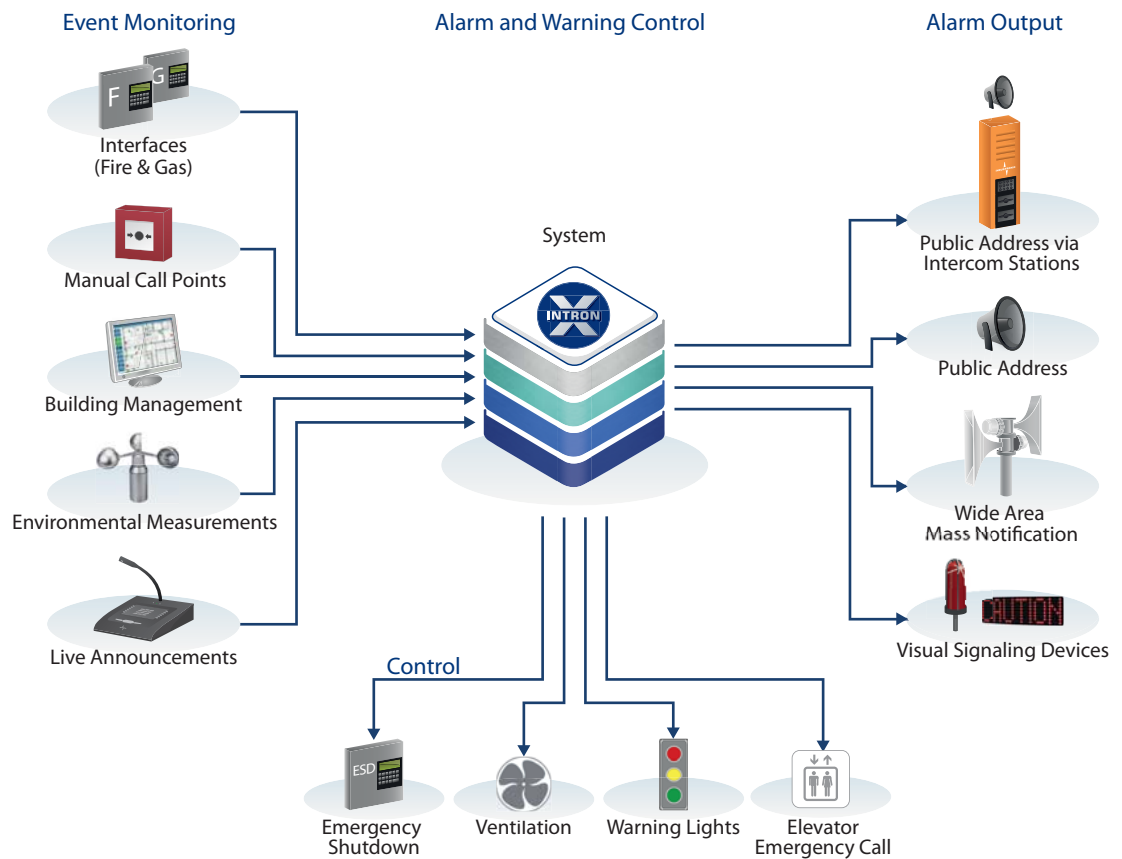


ALARM AND WARNING FUNCTION

IN A NUTSHELL

Automatic and/or manual triggering of alarms and warnings to protect human lives and to evacuate people.

ILLUSTRATION



DESCRIPTION

The alarm and warning function is often used to promptly inform people about emergency situations and to effectively evacuate them out of danger areas.



The alarm or warning is manually triggered by a person (e.g. via master control station, manual call point, etc.) or automatically via system interfaces. Immediately afterwards, the pre-defined alarm and evacuation procedure is initiated.



An alarm signal is automatically broadcasted via speakers and intercom stations. Optionally, a stored voice announcement can be played back after that. The alarm signal draws the attention of the people affected by the imminent danger. The announcement that follows gives clear instructions and guides people to the escape routes so that they find their way out of the danger area - if required in different languages.



Furthermore, authorized security staff and emergency services can directly intervene by making live announcements. People concerned are effectively informed about particular dangers and receive clear instructions on how to respond. This way, the evacuation can be controlled depending on the situation and panic can be avoided.



Additionally, visual signaling devices (e.g. flashing warning beacons) are often used to increase awareness of the alarm, especially in noisy areas. LED displays also facilitate orientation.



A phased evacuation is recommended to prevent a large number of people on the escape routes and in the stairwells. People in areas exposed to the highest danger are instructed first to leave the building along the escape routes. After that adjacent areas are evacuated until all people have left the danger area. This prevents escape routes from becoming overcrowded and, in combination with targeted announcements, avoids panic.



If required, you can automatically control ventilation systems, elevators, warning lights and doors as well as shut down critical plant components.

APPLICATION EXAMPLES

INDUSTRONIC's PA/GA system with alarm and warning function is connected to a fire & gas alarm system. A potential-free contact or the Modbus TCP interface reports a fire or gas leak to the PA/GA system which is then processed with the highest priority.

The pre-programmed evacuation procedure starts immediately:

- Propagation of alarm tones and/or stored voice announcements via speakers to all areas affected
- Activation of flashing warning beacons and LED displays to increase awareness as well as to facilitate finding the escape routes
- Automatic control of ventilation systems, elevators, warning lights, and doors
- Emergency shutdown of critical plant components

By making live announcements, the security staff can directly intervene in the emergency situation and clearly instructs people affected on how to respond - depending on the situation.

As soon as the emergency situation dissolves, the all-clear is given and the alarm and warning function is manually terminated by an authorized person or automatically by the PA/GA system.

CUSTOMER BENEFITS

- Protection and safety of people, the environment, and capital goods
- Reliable alarm triggering and quick, orderly evacuation to save human lives
- Live announcements depending on the situation, e.g. to prevent panic by giving clear instructions and to expedite the evacuation
- Individually and flexibly configurable alarm and warning concepts both for small and complex industrial plants
- Alarm and warning scenarios across different sites and/or zones
- Simultaneous propagation of different announcements to different speaker zones
- Adaptation of the existing safety concept to customer- or plant-specific requirements
- Compliance with legal regulations to protect people in emergency situations
- Facilitation for control room staff due to automation of complex alarm and warning scenarios

OPTIONS

PA/GA and Intercom

INDUSTRONIC's PA/GA system can be easily expanded with intercom functions. Consequently, you have a system which can be used for both the propagation of live-saving information in case of an emergency and for industrial process communication. It also enables communication in emergency situations between the control room and the people on site or the emergency staff.

Using the Alarm Equipment for Other Purposes

Speakers and intercom stations used for the alarm and warning function can also be used for other purposes (e.g. two-way communication, group calls, background music).

Interfaces

The various interfaces of INDUSTRONIC's PA/GA system enable easy connection to control room and emergency detection systems as well as the integration of radio and PABX systems. Existing components such as speakers or flashing warning beacons can also be used.

Logging

Warning and alarm events can automatically be stored in a log file which would include, for example, where and when the alarm was triggered.

Conformity with Standards

PA/GA systems from INDUSTRONIC comply with the requirements of current standards such as:

- DIN EN 50849
 - IEC 60945
 - EN 54-16
 - VDE 0833-4
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TECHNICAL DETAILS

The alarm and warning scenario is adapted to customer requirements. The following details are defined for each alarm:

- Which type of alarm is it (e.g. fire, gas)?
- How is it triggered (automatically and/or manually)?
- Which priority is assigned?
- Which areas or zones are to be addressed?
- Which acoustic and visual signals are to be used?
- Which additional components are to be controlled (e.g. doors, elevators, ventilation)?
- How and when is the alarm reset (all-clear)?

Acoustic signals:

- Tone signals (e.g. alarm tones)
- Pre-recorded, alarm and warning messages in different languages
- Combination of stored tone signals and voice announcements
- Live announcements depending on the situation

Visual signals:

- Flashing warning beacons
- LED displays

Alarms can be triggered via:

- Alarm sensors (e.g. fire and gas detectors, fire detection system, chemical leak)
- Modbus TCP interface
- Manual call points
- Intercom stations

Control signals can be used for:

- Control of other INDUSTRONIC systems
- Control of third-party systems
- Shutdown of supply air or exhaust air systems
- Control of elevators and warning lights
- Opening and closing of doors and gates

Up to 1,000 warning sequences can be configured.

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