

Secure-Ship1 - Specification Sheet

Ship Protection System



General

The Secure-Ship, Counter Boarding System is designed to protect the vessel against piracy attacks, illegal entrances and stowaways.

Secure-Ship does this in three ways:

- Detection of a boarding attempt – warning the crew
- Scaring away the boarders – very loud siren and flood lights.
- Prevention of this attempt – protecting the crew and ship

The system consists of a “collapsible” electrical fence that is placed all around the ship. When entering a harbor or when a boat or barge needs to come alongside it is fast and easy to collapse part of the electrical fence, while maintaining the rest of the fence operational. Since the fence is divided into port and starboard zones it is possible to activate only one side of the ship while de-activating the other. This is very useful when the ship is moored alongside in the harbor, and one wishes to de-activate the pier side while keeping the waterside active. A sophisticated control system detects entry attempts and transmits those to the various output devices (lights, alarms, sirens). The very loud noise generating system and strong floodlights ensure that any boarding attempts are quickly aborted. For those intruders that are not repelled by the noise and lights a very high voltage current (which is non lethal) that runs thru the fence ensures that it is almost an impregnable hindrance to pirates and illegal trespassers, thus protecting the crew and ship.

The advanced power system ensures that the system keeps detecting even when the power supply is cut and the Energizer system produces high voltage peaks with a maximum of 9000 Volts. This high voltage guarantees a shock at the slightest contact with the electrified wire. The shock effect resulting from high voltage is naturally a deterrent. It goes without saying that the shock is totally harmless. The maximum current within the wire is limited to 36mA. This produces a shock of 8 Joules, which is the legal limit.

Detection in the advanced power system is designed in such a manner that it is insensitive to all types of weather variations and influences of the environment, without the effectiveness of detection being impaired.

Features

The detection unit - The detection unit of the Secure-Ship APS[®]-system signals both break-in attempts and sabotage attempts. A certain number of conditions must be filled in for the alarm to be triggered. Thus, an important and sudden drop in the high voltage will sound the alarm. This voltage drop procedure is defined in such a manner that furtive contact with the wire will not trigger the alarm. Indeed, we assume that in such a case, the person is deterred and no longer constitutes a threat. Should the power drop considerably for a longer amount of time ($\pm 3,5$ sec.), the alarm is triggered. Cutting the wire will immediately sound the alarm.

Accordingly, the alarm is sounded immediately if the electrified wire is grounded, or connected to grounded metal objects. Detection in the Secure-Ship APS[®]-system is designed in such a manner that it is insensitive to all types of weather variations and influences of the environment, without the effectiveness of detection being impaired.

The "Plus" detection unit – The advanced power system comes standard with three new features. The first feature is an extra alarm relays, which generates a signal when the high voltage on the wire drops under a predefined setting. This extra level is called **pre-alarm**. Its aim is to signal, for example, that some current is drained (leakage to vessel's hull). The second feature concerns the signal that is triggered when the wire is cut during low voltage operation (in the harbor during day time). The **cut-proof alarm** is ensured by a low voltage signal on the electrified wire.

The third new feature concerns the possibility of running the system **autonomously** by using an emergency battery. The system continues to work, automatically switching to low voltage.

The energizer - The energizer of the APS guarantees the production of high voltage peaks with a maximum of 9000 Volts. This high voltage guarantees a shock at the slightest contact with the electrified wire.

The shock effect resulting from high voltage is naturally a deterrent. It goes without saying that the shock is totally harmless. The maximum current within the wire is limited to 36mA.

This produces a shock of 8 Joules, the legal limit. Furthermore, the energizer works in pulses. This means that the above-mentioned voltage peaks are only generated with a frequency of 50 per minute. This pulsing action combined with the low current guarantees that any danger of physical injury is totally excluded.

The Secure-Ship APS[®]-system complies with the European norms IEC1011, NEN5237, IEC60335-2-76 en EN61011.



The electrified wire - The electrified wire of Secure-Ship is fitted on special poles, which are connected to the ship's hull. The shock wires are attached to struts fitted to the poles. 4 wires are connected to each pole thus surrounding the ship.

The shock wires are tensioned using Secure-Ship patented tensioning springs. Elongation and shrinking caused by temperature changes are compensated by the double torsion springs.

The shock wires are thus always taut.

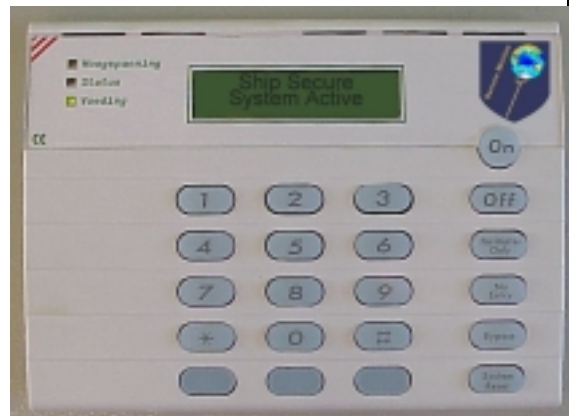
A special designed "foot" enables quick and efficient folding of the system. This is useful for the initial installation as well as for going alongside in the harbor or working with the cargo.



MemTel® control module - The aim of the module is to manage the APS on the one hand, while recording and processing alarm events in a memory on the other.

The control module is located on the bridge for quick and easy access. Connection between the detection unit and the control module is wireless, so no wire "pulling" is required. The control module includes the following features:

- Starboard and Port zones (activate/de-activate – useful for pilot entry or barge alongside)
- Control of alarms, sirens and lights
- Memory of last 400 alarm events



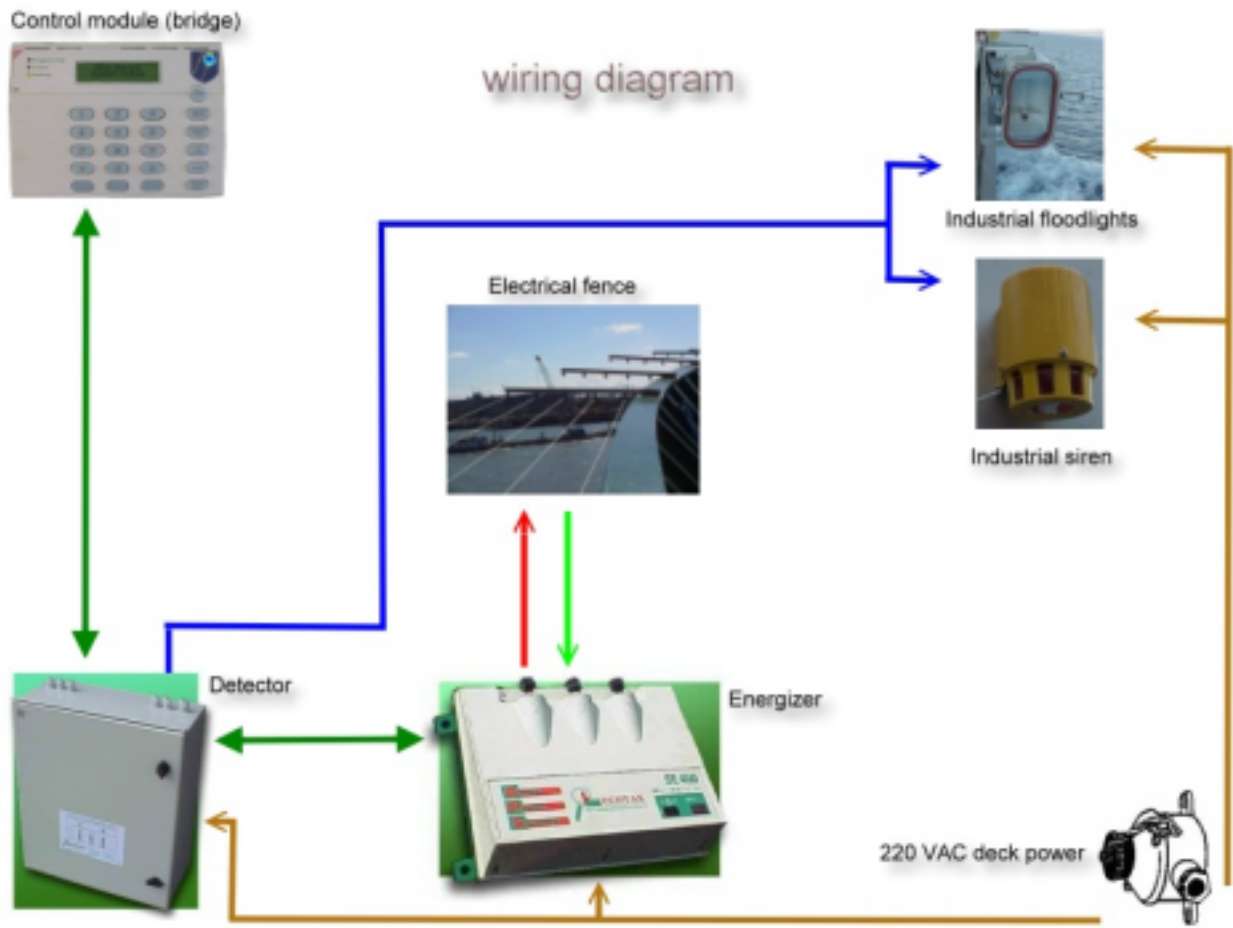
Installation

Ship-Secure is a modular system that can be installed by the ship's crew without any "outside" help.

The system is installed so that a horizontal electrical shock fence surrounds the ship. The Detection and Energizer units are installed near the fence while the control module is installed on the bridge. A 4 wire cable ensure that the bridge module is connected to the system. Alarm sirens and floodlights are connected via wireless to the detection unit.

Beginning at the rear portside (and repeating the same operations on the starboard side) the following should be done to install the system:

- Start with welding an "End point pole holder" to the deck (under the railing) at the mid aft position.
- Then, every 3 meters weld the special "pole holders" to the deck for the "normal poles".
- At the location for a pilot ladder or gangway weld two "Special End point pole holders" (one at each side of the entrance)
- Also, weld a "Strong pole holder" every 30 meters (of continuous normal poles)
- At the mid forepeak weld another "End point pole holder"
- The front and rear "End point pole holders" for the starboard side are the same as the portside ones (separating the portside and starboard side circuits)
- Now insert and lightly fasten the "End poles" and "Strong poles" in the vertical "End pole & Strong pole holder" positions

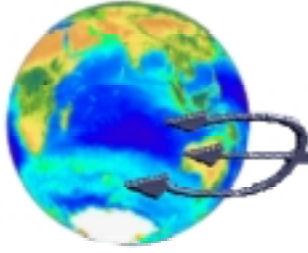


Specifications

Input Voltage:	230 VAC
Emergency power supply:	24 hour backup low currency system
Number of detection zones:	Standard 2, expandable to 8 zones
High power current voltage:	9000 volt
High power current energy:	8 Joule
Number of pulses:	50 x per minute
Sabotage detection:	Low currency signal
Alarm types per zone:	<ul style="list-style-type: none">• High voltage circuit alarm• Low voltage circuit alarm• Pre-alarm for currency drainage• Los of main 230 V supply• Attempt to open control units
Activating /de-activating:	Per zone using the Memtel control unit
Dimensions Power casing:	60 cm x 50 cm x 23 cm (HxWxD)



For more information:



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