The Tsunami is Coming. How do you Sound the ALERT?

- Complete Turn Key Solution
- Reliable
- Low Life-cycle Costs
- Instantaneous Activation
- Independent Operation of Horns
- Virtually Maintenance Free
- Long Life in Harsh Marine Environments
- Ease of Installation
- Ideal for Remote Locations
Pharos Marine/Automatic Power, Inc. offers national and local emergency service departments an economical and reliable tsunami warning system at minimal cost and low yearly maintenance.

The Poseidon tsunami warning signal is based on the LIEX 710 series sound signal that has a proven service record of operating in the harsh marine environment for over 30 years. The 100-watt speaker with heavy duty nylon diaphragm is housed inside an heavy duty, corrosion-resistant, cast aluminum housing. The 10mm thick house walls provide a vandal resistant enclosure for the speaker and electronics. The electrical and remote controls are mounted inside the top of the horn.

**FEATURES**

Completely self-contained with modular solar panel/battery power supply. Battery sized to sound the signal for 24 hours continuously. (AC power/Battery option available).

<table>
<thead>
<tr>
<th>Low Voltage and Low power consumption - 12 Volt Input, 54 Watts for 1 Mile Range</th>
<th>670 Hz tones tuned for optimal sound propagation in beach/surf installations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low installation cost – no connection to electrical grid needed</td>
<td>Two Coded Signals available</td>
</tr>
<tr>
<td>Low maintenance costs – Heavy Duty Cast Aluminum Housing, no moving parts</td>
<td>Omni-directional</td>
</tr>
<tr>
<td>Minimal preventative maintenance required to ensure 100% availability – IP 66 Rated. NEMA 4X, non-corrosive</td>
<td>GPS synchronization to synchronize the sounding of several horns at a given locale</td>
</tr>
<tr>
<td>Manual On/Off Test/Control Switch and Remote activation options (UHF, VHF, Satcomm, or Cellular)</td>
<td>Optional Flashing Warning Light for visual indication of alarm</td>
</tr>
</tbody>
</table>

**OPTIMIZE SITING**

Because the Poseidon warning system is not dependent on AC power, it can be located where it is needed without regard to the location of existing power lines or the expense of installing new electrical runs.

**LOW MAINTENANCE**

The Poseidon system is designed to be maintenance-free. Solar panel is equipped with bird spikes to prevent bird soiling and is cleaned by rainfall. A routine change of battery every three to four years is all the maintenance required.

**VANDAL RESISTANT**

All components are located high above ground level to prevent vandalism and theft of items.
SPECIFICATIONS

INPUT
Voltage: 12 VDC nominal
Current: 4.5 amps at 12 volts during sounding

OUTPUT
Frequency: 640-680 Hz ± 2%
SPL: 126.5 db at 1 meter for one mile nominal range

CODING
Multiple codes, user selectable

ENVIRONMENTAL
Marine atmosphere
Temperature: -25º C to + 55º C
Relative humidity: 0-100%
Survival wind: 250 kph

BATTERY
12V Photovoltaic, AGM, Deep-cycle, 30 amp-hrs
(AC battery charger/Battery option available)

SOLAR PANEL
12V marine grade solar panel sized to fit solar insolation at site.

RADIO FOR REMOTE ACTIVATION
INMARSAT D+ SC-201 Communicator (Optional VHF, UHF, or Cellular)

OPTIONAL WARNING LIGHT
Quick flashing strobe light to provide visual indication of alarm.

GPS SYNCHRONIZATION
Unilash III to allow two or more horns to sound in sync.

WEIGHT
70 kg
POSEIDON CONTROL SYSTEM

Automatic Power’s INMARSAT D+ SC201 Communicator provides near 100% communication reliability between the Tsunami Warning Center and the Poseidon warning horns, 24 hours a day, 7 days a week.

The user is able to remotely trigger sounding of individual horns, or groups of horns using web-based control software. Alarm activation is realized in a matter of seconds.

Unit sends alert if battery voltage or solar panel charging current is low.

All Poseidon warning horns will send reply signal back to the control center indicating that it is operating. Monthly tests to ensure proper operation of the horns can be conducted to ensure horn readiness.

ADDITIONAL SOFTWARE FUNCTIONALITY

- Secure offsite Webserver and Database storage
- Password Protected web-based access for remote Display
- Control of unlimited number of Poseidon warning horns
- Email notification of alerts sent to unlimited number of email addresses
- SMS notification of alerts sent to mobile phones
- FAX and Pager notification

POSEIDON LIEX 710 TSUNAMI ALARM
TYPICAL POSEIDON HORN DEPLOYMENT

Horns are synchronized to enhance aural reception by surrounding population
POSEIDON HORNS ARE IDEAL FOR REMOTE ISLAND INSTALLATIONS

Aceh, Indonesia Deployment
TYPICAL POSEIDON COMMUNICATIONS LINK

Primary communication link is by a direct TCP/IP connection between the National Warning Center and the Inmarsat Service. A secondary link by direct satellite communication to the Inmarsat Control Station provides a link that is not dependent on any landline internet connection. This offers the customer with a redundant communication link to increase system reliability.

The quickest and most reliable method to activate the Poseidon warning horns is to control them directly from the National Warning Center. However, control from a regional or secondary center is also possible.

The Inmarsat system was selected as an Inmarsat satellite is always in view to pass commands to the Poseidon horns in near instantaneous time.

The optional Inmarsat D+ radio can be implemented at a relatively low cost; the cost of a single Inmarsat D+ radio and a very small recurring monthly charge.
TYPICAL LISTING OF POSEIDON HОРNS BY:

- ALL HORNS
- HORNS BY REGION
- HORNS BY ZONE
- INDIVIDUAL HORNS

The hierarchy can be as many levels as needed. To sound a warning, check the horns to activate and click "Activate Horns" button.

POSEIDON HORN ACTIVATION SCREEN
**LISTING OF POSEIDON HORNS SHOWING HORN STATUS**

<table>
<thead>
<tr>
<th>Serial#</th>
<th>Horn#</th>
<th>Status</th>
<th>Time</th>
<th>Alarm</th>
<th>Battery State</th>
</tr>
</thead>
<tbody>
<tr>
<td>1002944</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>12/28/2009 5:08:00 PM</td>
<td>13.4</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002945</td>
<td>100-144-410</td>
<td>ACTIVE</td>
<td>12/28/2009 1:16:00 AM</td>
<td>12.4</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002946</td>
<td>100-144-410</td>
<td>ACTIVE</td>
<td>12/28/2009 1:15:00 PM</td>
<td>12.6</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002947</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>9/21/2008 6:15:00 AM</td>
<td>12.4</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002948</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>12/26/2008 1:09:00 PM</td>
<td>12.3</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002949</td>
<td>100-144-410</td>
<td>ACTIVE</td>
<td>6/30/2008 6:15:00 AM</td>
<td>12.4</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002950</td>
<td>100-144-720</td>
<td>ACTIVE</td>
<td>11/4/2009 3:07:00 AM</td>
<td>11.3</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002951</td>
<td>100-144-003</td>
<td>ALARM</td>
<td>7/28/2007 1:11:00 PM</td>
<td>Low Battery Voltage</td>
<td>11.2</td>
</tr>
<tr>
<td>1002952</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>12/4/2007 6:07:00 PM</td>
<td>12.4</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002953</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>2/8/2008 6:00:00 AM</td>
<td>13.1</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002954</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>2/7/2008 5:00:00 AM</td>
<td>12.7</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002955</td>
<td>100-144-003</td>
<td>ALARM</td>
<td>1/24/2007 5:00:00 AM</td>
<td>Low Battery Voltage</td>
<td>11.2</td>
</tr>
<tr>
<td>1002956</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>2/6/2009 6:07:00 PM</td>
<td>12.4</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002957</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>2/6/2009 6:07:00 AM</td>
<td>12.5</td>
<td>Low Battery Voltage</td>
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<tr>
<td>1002958</td>
<td>100-144-410</td>
<td>ACTIVE</td>
<td>2/4/2009 6:08:00 AM</td>
<td>12.7</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002959</td>
<td>100-144-410</td>
<td>ACTIVE</td>
<td>2/16/2009 6:13:00 PM</td>
<td>12.9</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002960</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>2/6/2009 6:13:00 PM</td>
<td>12.6</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002961</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>2/6/2009 6:13:00 PM</td>
<td>12.4</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002962</td>
<td>100-144-002</td>
<td>ACTIVE</td>
<td>12/26/2009 6:13:00 PM</td>
<td>12.3</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002963</td>
<td>100-144-410</td>
<td>ACTIVE</td>
<td>12/26/2009 6:13:00 PM</td>
<td>12.3</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002964</td>
<td>100-144-410</td>
<td>ACTIVE</td>
<td>12/26/2009 6:13:00 PM</td>
<td>12.3</td>
<td>Low Battery Voltage</td>
</tr>
<tr>
<td>1002965</td>
<td>100-144-003</td>
<td>ALARM</td>
<td>12/27/2009 4:00:00 PM</td>
<td>Test TX Fail</td>
<td>12.4</td>
</tr>
<tr>
<td>1002966</td>
<td>100-144-002</td>
<td>ALARM</td>
<td>12/16/2009 16:11:00 PM</td>
<td>Low Battery Voltage</td>
<td>11.9</td>
</tr>
</tbody>
</table>
LOCATION OF POSEIDON HORNS CAN BE DISPLAYED ON CHART
<table>
<thead>
<tr>
<th>Email Address</th>
<th>Data Format</th>
<th>No Alarms</th>
<th>No Email</th>
<th>Use FTP</th>
<th>Use Public FTP</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:nul@marinoperator.com">nul@marinoperator.com</a></td>
<td>WEB</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CivilDefense1@</td>
<td>PASS-THRU</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>@nasco-inc.com</td>
<td>POSEIDON</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>automaticpower.com</td>
<td>PASS-THRU</td>
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</tr>
<tr>
<td></td>
<td>PASS-THRU</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>PASS-THRU</td>
<td></td>
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</tr>
</tbody>
</table>

Alerts and notifications can be sent for alarms and activation of each Poseidon horn.

Poseidon
Tsunami Warning System