



# AlphaHeatDetectionSystem

Advanced early alarming

[alpatronmarine.com](http://alpatronmarine.com)

# Features

In some situations, regular fire alarm sensors do not detect heat/smoke or detect it too late. This thermal network bullet camera is applied to perimeter defense and fire-prevention purposes and helps to identify these hazardous situations in an early stage, before a heat source ignites, even when partly covered or in heavy rain. You can even unburden captain and crew by remote monitoring through satellite connection.



- Leading image processing technology
- 2 alarm phases: pre-alarm and real alarm
- Alarm temperatures configurable
- Easy to install
- 24/7 recording
- Output to fire alarm available
- Monitoring through satellite
- Advanced heat/fire detection and localization
- Anti-corrosion stainless steel material
- Possibility to in/exclude area's from alarm zone



## Safety first

Onboard RoRo passenger ships vehicles and cargo pose possible threats as heat sources enter the vessel undetected. By using international databases, class records, EMSA marine casualty reports, incident reports and interviewing owners, DNV-GL has identified 35 fires within RoRo spaces between 2005 and 2016. In all identified cases, the fire was caused by a vehicle or cargo.

Early detection is often cited as key to preventing loss of life, ship and extensive cargo damage. The AlphaHeatDetectionSystem offers to all types of RoPax vessels a cost-effective safety measure which can identify and prevent hazardous situations.

The investment that must be made for this system to cover the Gross and Net Cost of Averting a Fatality (GCAF/NCAF) will stay far below the standard. Additionally, by installing the AlphaHeatDetectionSystem you are eligible for a reduced insurance premium at selected insurance carriers (check terms and conditions).

# SOLAS

SOLAS requires a fixed fire detection and fire alarm system to be fitted in all RoRo spaces. However, no fixed fire detection and fire alarm system are required on weather decks. Even though any detection system activated by heat, smoke, flame, etc. are allowed in open RoRo spaces. In practise, the most common type of detection system relies on smoke detectors.

By the time smoke is detected upon a weatherdeck, the heat source often already ignited and forms a serious threat. Be safe and ready for the future with the AlphaHeatDetectionSystem that offers a proven reliable preventive fire detection solution for both confined spaces and weather decks.

## Top deck

The system is highly suitable for existing and newbuild open RoRo spaces and weather decks of RoRo passenger ships and container vessels carrying a variety of cargo. The AlphaHeatDetectionSystem cameras can be mounted to cover front and aft on the open weather deck to ensure a full overview.

## Below deck

Another typical set-up includes multiple cameras covering each lane individual below deck (RoRo). This way you are able to detect heat sources which are normally not in plain sight.

In this configuration, it is possible to activate the system to sailing mode when the weather deck ramp is closed.



- Parameters can be set between the  $-20^{\circ}$  and  $200^{\circ}$  Celsius range.
- The cameras have a 25mm lens with a Field-of-View of  $24.55^{\circ}$  horizontal and  $19.75^{\circ}$  vertical.
- The minimal distance is 2 meters, going up to 585 meters for temperature measurement.
- The VCA (Video Content Analysis) features such as motion detection, will go up to approximately 250 meters for humans and 750 meters for vehicles.



# Alarm

In case there is an alarm, a time relay will activate. If the alarm is not muted, the alarm will go to the general fire alarm system after 1 minute. When the 'Mute' button is pressed, the relay deactivates.

The alarm can be muted via a touch MFS control panel. The MFS control panel will display the activation status of the AlphaHeatDetectionSystem and in case of an alarm, a mute-button and timer are shown.

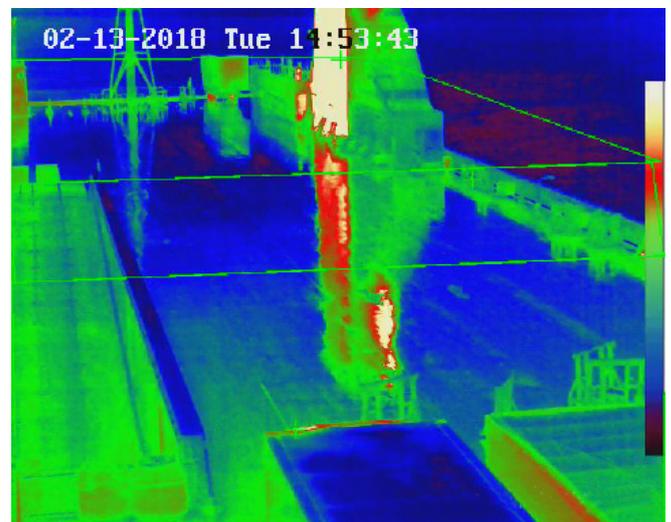
For optimal safety, the system can be connected to both the existing fire alarm system and VDR.

# Configurations

Onboard a vessel constant heat sources like the chimney, motor, and solar reflection are present, which can cause false alarms. Fortunately, this can be taken into account in the configuration of the AlphaHeatDetectionSystem. Also, several settings may be used for specific operation sequences such as during loading or unloading and the voyage.

There are 10 possible alarms to be set per measure point (camera) which means it is possible to create multiple zones, pre-alarms and alarms.

In below example, the weather deck is defined in sections for easy localization and better detection because of the distance. Also, the chimney/exhaust is defined and excluded in case of too much heat. The example shows black and white and rainbow view.



# Display

The AlphaHeatDetectionSystem can be connected to a stand-alone console or a high resolution, fully dimmable AlphaScreen which is available with stand and as flush mount. Optionally, the system can also be integrated into the existing bridge computer system.



# Complete package

The AlphaHeatDetectionSystem standard package includes two cameras, an MFS control panel and peripherals. It is possible to flexibly combine the system as per your needs. For example, extend the system with multiple camera's to create a broad overview to monitor fire safety on your vessel and choose a display solution to optimize convenience for captain and crew.

Optional stand-alone console





## Proven solution

Several recent total losses of RoRo ships with open ro-ro spaces have stressed the need for investigating more efficient detection in open RoRo spaces and weather decks. The AlphaHeatDetectionSystem was extensively tested with different fire scenarios to challenge the system, taking into account the effects of ventilation, weather and other relevant factors. The test carried out on the Stena Scandinavica and witnessed by Class Society Bureau Veritas Marine and Offshore and RISE Fire Research AS, was concluded with positive results, reflecting the system is able to more rapidly detect heat sources compared to common smoke detectors.

### Customer case Stena

Peter van de Wardt, Senior Master on the RoRo Stena Transporter shares his experience about the development, installation, testing and operation of the AlphaHeatDetectionCam. “Weather decks on RoRo and Ropax have no fire detectors. Fires onboard ships can be handled by ship crews only on early detection and prompt action” explains Peter van de Wardt. For Stena Line, this was a challenge to solve. They contacted Alpatron Marine for a solution. At the time there was no product on the shelf but Alpatron Marine was willing to think with us for a solution. From this point, we started a 1,5-year cooperation project and came with a unique innovative product, the AlphaHeatDetectionSystem.

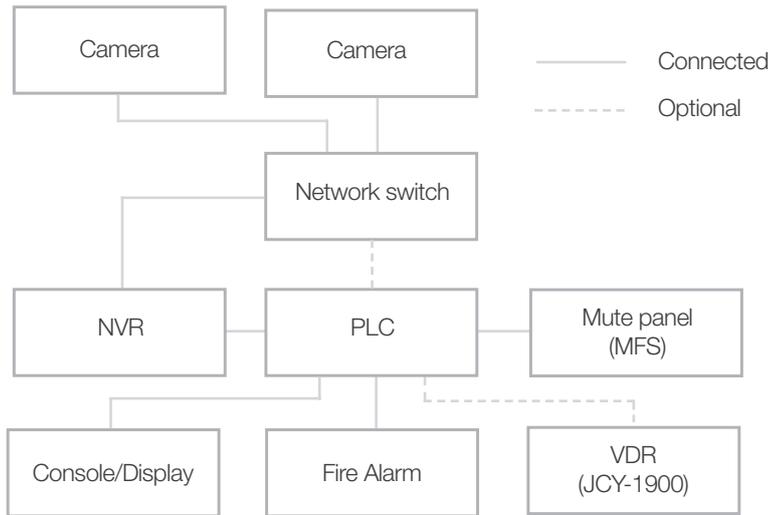
Peter continues: “During these 1,5 years many challenges were met. Cable runs (cameras, supplies and internet connections) were done by the crew. For many months we did collect data and met our first big challenge: reflection from the sun. It took a long time of engineering writing new software and collecting data again. In the meantime, we did startup another project: heat cameras on enclosed decks. Here reflection will be your friend. Also, a live trial was held onboard Stena Scandinavica witnessed by the authorities which was very successful”.

Sister ship Stena Transit is now also equipped with the AlphaHeatDetectionSystem on the weather deck.

“It is an innovative project which needed a lot of time and investment of both parties. The result is very good with high potential. It did meet our expectations”, concludes Peter van de Wardt.



# System diagram



## In the box

- 2x Camera
- Network switch
- Network Video Recorder (NVR)
- MFS control panel
- Peripherals
- License
- Manual

## Optional

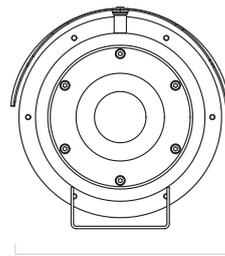
- AlphaScreen
- Stand-alone console
- Panel PC
- Camera bracket

The diagram is based on the standard package.  
Other combinations/extensions are possible.

# Tech Specs

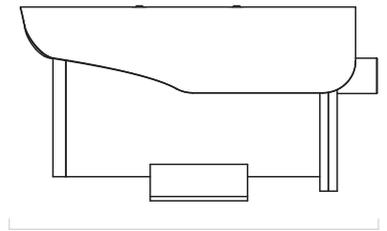
Heat Detection Camera RoHS

Weight 1,2 kg (2,65 lbs)



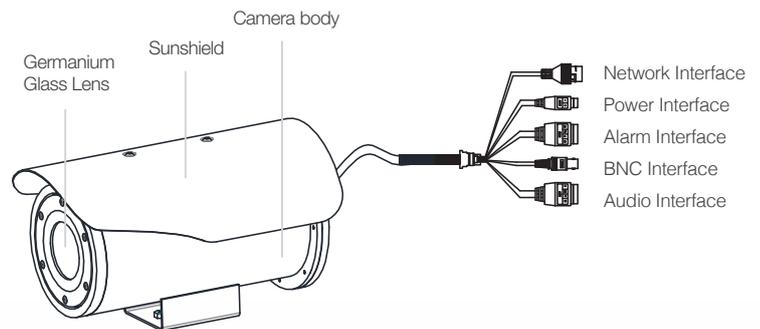
178 mm  
(7,01 in)

181,8 mm  
(7,16 in)



310 mm  
(12,20 in)

- View angle 24.55° horizontal 19.75° vertical
- Camera IP68 classification
- Resolution 614x512 pixels up to 720p
- Stainless steel
- 25mm Lens





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