



# Fire Protection on RoRo Vessels

## The Challenge

RoRo (roll-on/roll-off) vessels are used frequently in modern day society, which means that protecting them from fire damage is of the utmost importance. Similar to traffic tunnels and parking garages, RoRo vessels are enclosed spaces that face serious structural and safety risks in the case of a fire. The ability to quickly detect, localize and respond to a fire is paramount in saving human lives and protecting the environment, the vessel and other valuable assets.

However, RoRo vessels are often harsh environments including exhaust gases, tyre abrasion, flammable liquids, salty aerosols. Many have ventilation systems and high airflow, as well as large open spaces that can create a challenge for most fire detection systems. This potential for false alarms makes having a robust and reliable fire detection system even more important.

## The Innovation

AP Sensing's fiber optic Linear Heat Detection (LHD) solution addresses all the challenges encountered when searching for a robust heat detection system to monitor RoRo vessels. A passive 4 mm fiber optic cable is utilized as a linear temperature sensor. This cable is light, easy to install and virtually maintenance-free.

Our sensor cable withstands severe conditions and delivers fast detection, while also having the industry's lowest lowest nuisance alarm rate.

Due to the continuity and linearity of our sensing system, thousands of temperatures within the RoRo vessels are measured in real time, pinpointing any hotspot or fire with complete accuracy.

AP Sensing's unique sensor cable design allows temperature measurement up to several hundreds of degrees Celcius, tested as per IEC 60331-25 at 750°C. This enables the system to not only detect, but also monitor fire development by providing alarms to the fire panel and in addition vital information about fire size and spread.



SmartVision asset visualization during a fire test

With our comprehensive asset visualization software SmartVision, all information is available at a glance and rendered for further processing by SCADA. The system is also fully integrable with other tools and fire suppression systems.

## Fast & Adaptable Detection

The AP Sensing LHD solution consists of a fiber optic sensor cable and a fully-tested control instrument that measures a complete temperature profile in the RoRo vessels within seconds. As an addressable Linear Heat Detector, multiple project-specific fire zones are mapped to the control instrument and a variety of alarm parameters (rate-of-rise, maximum, adaptive) can be programmed to each fire zone. This solution delivers fast detection while minimizing nuisance alarms.

Pre- and main alarms can be programmed to initiate countermeasures. In the event of a fire, our Linear Heat Detection system provides immediate information regarding fire location, size and spread. All information is available through dry contacts and high level communication, e.g. Modbus protocol.



**Passion for Plants.**  
For every unit sold, AP Sensing plants 100 trees.

## Reliable & Cost-Effective

Our LHD solution is thoroughly tested, with a 35-year MTBF and the most complete set of certifications on the market (VdS EN 54-22, DNV, UL 521, ULC-S530, FM 3210 and 3010, and additional approvals for ATEX, IECEx and SIL2). It is robust and has passed highly demanding type tests. The sensor cables are proofed against IEC 60331-25 for high temperatures, ensuring the system withstands the demands of fire monitoring. The sensor cable is passive, robust, immune to EMI, resistant to dirt and dust, and does not require maintenance. In the case of a break, the cable is easily spliced — reducing off-times.

Regulation stipulates testing of the fire protection system in certain intervals; testing of AP Sensing's LHD system is simple, time-saving and does not require down-time of the vessel, access of all decks and intensive testing on board. Heating a few meters of sensor cable in an accessible area is sufficient to test the entire system.



## Why AP Sensing?

- Industry-leading Linear Heat Detection (LHD) technology with fast response times, excellent accuracy and low maintenance.
- With AP Sensing's LHD technology, there is no need for laborious system shutdowns during the loading and unloading of RoRo vessels.
- All product variations are fully certified and in compliance with internationally recognized standards.
- Our experience and proven deployment in all regions in the world – our project reference list is extensive and comprehensive.
- Range of certified sensor cables to fit every need and comprehensive.
- Easy system integration through flexible protocols and interfaces.
- World-class service, support and training.



Watch our Application Video  
<http://youtu.be/ZpbPlxD6P5U>



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