



# Alcohol Tank Fire Detection

Santiago de Chile, Chile

An AP Sensing Fiber Optic Linear Heat Detection (FO LHD) solution was selected to monitor alcohol tanks in the Panimex Quimica chemical plant in Chile. The project specifications stipulated one traditional, thermocouple LHD system for each tank, but due to past experiences with false alarms and continuous maintenance requirements at other sites, the tank farm operator chose AP Sensing's FO LHD. In addition to providing more information than other systems, only one AP Sensing FO LHD unit was required to monitor the entire tank farm.

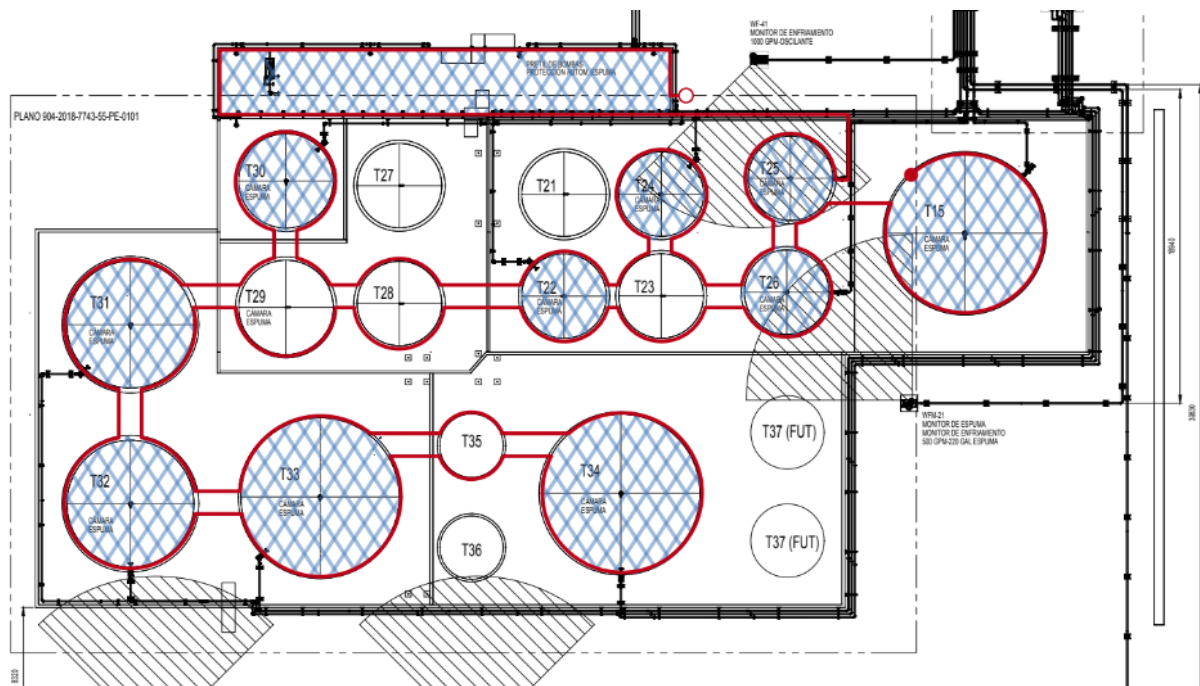
After installing new storage tanks onsite, the site operator required a continuous and precise temperature monitoring system with the intention of implementing a preventative system instead of simply reacting to critical events afterwards. Our system provides this possibility with early detection and the generation of pre-alarms when abnormal temperature conditions arise.



*Alcohol tanks onsite*

AP Sensing's certified, armored sensor cable was used in the installation alongside one, four-channel N4387B unit with a range of two kilometers. The cable is installed redundantly with two loops in order to ensure uninterrupted monitoring, even in the case of a fiber break.

FO LHD was an excellent choice based off the tank contents and site conditions. This fire detection system provides the exact location of temperature measurements and events that cause an alarm. Different zones can be established along the fiber optic cable, typically one zone per tank. The system is also integrated with a central fire alarm and activation system, where the external foam extinguishing system can be activated for each zone. Lastly, alarm levels can be configured flexibly according to specific project requirements. In order to avoid frequent false alarming as seen by other projects, the site operators configured the alarm settings so they do not trigger false alarms and unnecessarily activate the extinguishing system.



*Tanks Distribution Drawing*

### Fiber Installation

The armored sensor cable was installed and distributed throughout all the different tanks as illustrated in the drawing above. Each individual red circle on the drawing represents one tank and therefore one single fire zone. Not all tanks are required to be monitored, as some tanks onsite store substances such as water, which is not flammable or potentially harmful. The sensor cable is installed in cable trays that run between tanks.

It is possible for storage tanks to be accessible from the outside through the external staircases and the operator used this access to install the sensor cable in the rim seal area located on the roof of each tank for fire detection and continuous temperature monitoring, since the LHD solution is not only integrated to the fire panel but also to the cooling ring system for all storage tanks. This installation setup enables early detection of any temperature increase at each tank.