

# Reliable Overfill Prevention Achieved with Maintenance-free Safety Certified System

## RESULTS

- SIL2 certified overfill prevention
- Simple proof-testing without stopping the process
- Reduced maintenance and costs
- No need for additional cabling
- Proof-test intervals increased to every two years

## APPLICATION

Overfill protection in LPG bullet tanks

## CUSTOMER

Bulk LPG distributor, New Zealand

## CHALLENGE

A bulk LPG distributor in New Zealand required overfill protection for their LPG vessels. A SIL rated system was needed to meet local safety requirements. The devices that were currently installed were electromechanical level switches that were not safety certified; they were also becoming maintenance intensive. There were occasions where the switches got stuck and subsequently failed, so they could not be relied upon. In addition, the switches were adjustable, which meant that they could be adjusted to a level that was too high to operate properly.

Each time a tank survey was required, the existing electromechanical level switches had to be removed from the vessels, checked, and calibrated. These were then proof-tested with water back in the vessel. This process was both time consuming and labour intensive, taking approximately four to six hours to complete each test.

The customer wanted to replace the devices with a SIL2 rated system and decided to investigate alternative technologies that would be more reliable. However, most of the devices available were three-wire, which would require cabling upgrades and considerable additional cost.

## SOLUTION

The customer had other Rosemount™ devices installed at the plant and found that the Rosemount 2140 Vibrating Fork Level Detector fitted the required specification. It was SIL2 certified, more repeatable than the mechanical switches, and also more cost effective to install and run. The fixed fork length meant that the height could not be adjusted by operators, which eliminated human error. Importantly, the Rosemount 2140 is a two-wire device and required no additional cabling or installation costs.



*“We now have a SIL2 rated system that meets our safety requirements and has extended our proof-test interval to two years.”*



Rosemount 2140:SIS Vibrating Fork Level Detector

The unit was trialed for a year. The Rosemount 2140 proved to be reliable, required no maintenance, and did not need removing from the tank to perform proof-testing. The SIL2 certification also meant that proof-testing intervals could be extended to two years.

As a result, the customer has now made the Rosemount 2140 the standard replacement for the old electromechanical units on their LPG bullet tanks. To date, seven tanks have been fitted with a nationwide roll-out planned.

***The Rosemount 2140 required no additional cabling or installation costs.***

### RESOURCES

#### Rosemount 2140 Level Detector

[Emerson.com/Rosemount2140](https://emerson.com/Rosemount2140)

#### Emerson Automation Solutions Industries

[Emerson.com/Industries/Oil&Gas](https://emerson.com/Industries/Oil&Gas)

Standard Terms and Conditions of Sale can be found on the [Terms and Conditions of Sale page](#).

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#### Global Headquarters Emerson Automation Solutions

6021 Innovation Blvd  
Shakopee, MN 55379 USA


 +1 800 999 9307 or +1 952 906 8888


 +1 952 949 7001

 [RFQ.RMD-RCC@Emerson.com](mailto:RFQ.RMD-RCC@Emerson.com)

#### Europe Regional Office Emerson Automation Solutions Europe GmbH

Neuhofstrasse 19a P.O. Box 1046,  
CH 6340 Baar, Switzerland


 +41 (0) 41 768 6111

 +41 (0) 41 768 6300

 [RFQ.RMD-RCC@Emerson.com](mailto:RFQ.RMD-RCC@Emerson.com)

#### Middle East & Africa Regional Office Emerson Automation Solutions

Emerson FZE P.O. Box 17033  
Jebel Ali Free Zone - South 2  
Dubai, United Arab Emirates


 +971 4 811 8100


 +971 4 886 5465

 [RFQ.RMDMEA@Emerson.com](mailto:RFQ.RMDMEA@Emerson.com)

#### Asia Pacific Regional Office Emerson Automation Solutions

1 Pandan Crescent  
Singapore 128461

 +65 6777 8211

 +65 6777 0947

 [Enquiries@AP.Emerson.com](mailto:Enquiries@AP.Emerson.com)

00830-0300-4140 RevAA 03/19