

Rosemount™ 2140 Saves Midstream Company \$1.4M by Minimizing Shutdown During Proof-Testing

RESULTS

- Safety concerns eliminated, operators not exposed to process media
- Maintenance time freed up by approximately 1,000 hours per year
- Maintenance budget reduced by \$264K USD through eliminating manual testing of floats

APPLICATION

High level alarms on scrubber bottles in compressor stations.

CUSTOMER

North American refining logistics company with gas processing and refining operations in 13 states across North America.

CHALLENGE

One of the largest full-service providers of midstream logistics in Western USA wanted to reduce operating expenses and maintenance spending. The project goal was to reduce lifecycle cost, implement device validation and reduce data bottle-necks.

A key focus area was on level measurement on scrubber bottles within their compressor stations. The existing level measurement consisted of float switches, which were installed for high level alarm, but these offered no real-time certainty of their functionality. Also, the floats were prone to wear and required frequent re-build and, in addition, parts sometimes got lost into the scrubber bottle — posing additional issues.

The scrubber bottle works by knocking out any residual fluid from the gas stream before it enters the compressor. High level alarms are used to act as a “watchdog”, to prevent damage to the compressor from liquid entering. A separate level switch is used to operate the dump valve to remove the fluid build-up in the scrubber bottle. If a high level alarm fails, there is risk of overflow and spillage, which is potentially hazardous as well as costly to clean up.

The compressor stations are spread over a vast area, in remote locations and in areas where weather conditions can be challenging.

Company policy required all the high level alarm float switches to be checked/tested annually to verify functionality. This was a time consuming, costly and potentially risky process. The scrubber bottle units were shut-in annually for inspection, testing, and maintenance. Each float had to be removed from the vessel for immersion testing, creating multiple safety concerns.



“We have significantly increased our profits by being able to proof-test level alarms with virtually no process interruption.”



Rosemount 2140:SIS Vibrating Fork Level Detector installed on a scrubber bottle

This process resulted in substantial lost time, lost production, and additional maintenance scheduling. Removing the floats tended to cause thread damage to both device and vessel over time, adding to problems. Test time per float switch could be several hours with travel to and from site, draining of the tanks, and manpower costs for testing. Costs added up to hundreds of dollars per unit tested.

SOLUTION

The float switches were removed and upgraded to Rosemount 2140:SIS Vibrating Fork Level Detectors with remote proof-testing functionality. 220 Rosemount 2140s were installed throughout the fields across 110 compressor stations for high level alarm.

The result was that testing was completed in a few minutes per device. The plant could confirm their level alarms were functional without having to travel to, or shut down, the scrubber bottle or compressor station. This solution also eliminated safety concerns because operators are not exposed to process media during testing.

The Rosemount vibrating fork detectors were found to be very reliable and maintenance free, and had the advantage of an adjustable switch delay which prevented false switching from turbulence.

The plant was able to reduce maintenance man-hours by approximately 1000 hours per year, and reduce their maintenance budget by \$264K through eliminating the need for manual annual testing of the float switches. \$1.144M per year was saved by minimizing process shutdown for testing, and the project's payback period was approximately four months with 28 percent ROI.

RESOURCES

Rosemount 2140 Vibrating Fork Level Detector
Emerson.com/Rosemount2140

Emerson Automation Solutions Industries
Emerson.com/Industries/Oil&Gas

Standard Terms and Conditions of Sale can be found on the [Terms and Conditions of Sale page](#). The Emerson logo is a trademark and service mark of Emerson Electric Co. Rosemount and the Rosemount logotype are trademarks of Emerson. All other marks are the property of their respective owners.
© 2019 Emerson. All rights reserved.

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

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

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

Asia Pacific Regional Office Emerson Automation Solutions

1 Pandan Crescent
Singapore 128461
☎ +65 6777 8211
☎ +65 6777 0947
✉ Enquiries@AP.Emerson.com

00830-0200-4140 RevAA

ROSEMOUNT™

“We have reduced our operating expenses and maintenance spending considerably by using the Rosemount 2140s.”



Rosemount 2140:SIS Vibrating Fork Level Detector installation

[in](https://www.linkedin.com/company/Emerson-Automation-Solutions) [Linkedin.com/company/Emerson-Automation-Solutions](https://www.linkedin.com/company/Emerson-Automation-Solutions)
[t](https://twitter.com/Rosemount_News) [Twitter.com/Rosemount_News](https://twitter.com/Rosemount_News)
[f](https://www.facebook.com/Rosemount) [Facebook.com/Rosemount](https://www.facebook.com/Rosemount)
[You](https://www.youtube.com/user/RosemountMeasurement) [Youtube.com/user/RosemountMeasurement](https://www.youtube.com/user/RosemountMeasurement)
[g+](https://www.google.com/+RosemountMeasurement) [Google.com/+RosemountMeasurement](https://www.google.com/+RosemountMeasurement)


EMERSON