

Tank gauging solution reduces total cost of ownership

Endress+Hauser provides tank gauging solution in light end crude oil application

Benefits at a glance

- Easy to retro fit on existing tanks with minimal changes
- Lower cost of ownership
- Single source supplier from mechanical design, electrical design, system integration, instrument commissioning and system start-up
- On-site service and support
- Reliable migration plan for entire plant



One of the world's premier plastics, chemicals and refining companies producing materials that are essential to shaping what comes next in electronics, food packaging, construction materials, automotive components, motor fuels, textiles, medical supplies and more was in need of a tank gauging solution to meet their light end crude oil application needs.

The Challenge In the company's refinery, they had invested in an inventory management system many years back and have been upgrading tank gauges to the system on an as need basis. The original equipment on most of the upgraded spherical tanks use a servo technology, there are a few spheres where they tried free space radar, and the balance of the tanks that had not been updated over time still utilize a float and tape product that used a large stilling well. In some instances up to 18 inches in diameter.



These spherical tanks held a mixture of different light end hydrocarbon products under very low pressure of 5 psi or less. The customer wanted a tank gauging technology that would be reliable, since the free space radar did not work and wanted to have the best achievable accuracy with little to no modification to the existing tank mountings.

Our solution

- **Proservo NMS5** intelligent tank gauge
- **Promonitor NRF560** local display for tank side monitoring and controlling of Proservo NMS5 intelligent tank gauge
- Additional support included: **Project Management, Mechanical Fabrication, Field Commissioning, System Start-Up**

Solution details Endress+Hauser was asked to look at the next group of tanks for tank gauging which consisted of spheres, bullet tanks and internal and external floating roof tanks. Endress+Hauser did a survey of the installed system and looked over all the tanks. The customer had an existing software platform with a legacy digital communication protocol from an outside third party. The existing communication wires were already installed to each tank according to the topology of the communication guide lines. The team investigated the existing software and verified that the system would accommodate the tank expansion and would meet the customer's requirements. The customer was very impressed that Endress+Hauser could accomplish this migration as the single source supplier and that Endress+Hauser could also commission the instruments in a short two-week window.

Endress+Hauser supplied the Proservo NMS5 supporting the BPM protocol, with a gauge address to fit in the sequence of the existing software platform addressing requirements. The customer's application software engineer setup the gauge address in the existing software platform and the

gauge appeared in their inventory management system just like the previous tank gauges. The additionally provided RTD temperature data was integrated into the system as well. This installation utilized all the existing hard wiring and software configuration which helped to lower the total cost of the project and demonstrated to the customer Endress+Hauser's NMS5 was just as easy to use.

Endress+Hauser also supplied a monitoring and controlling Promonitor NRF560. This is used for tank side monitoring and controlling of Proservo NMS5 intelligent tank gauge. This is mounted at ground level so the operators did not have to climb up to the top of the tanks just to verify the level in the field. The customer's service technicians no longer needed a separate tool to check the gauge. With the optical interface on the Promonitor NRF560, the technician had all the tools at their hands at ground level.

Lastly, Endress+Hauser also provided the customer with all custom mechanical hardware for the gauges to be mounted without modifying the tanks, a key issue related to the cost of installation.

Results When utilizing Endress+Hauser's Proservo NMS5 and Promonitor NRF560 it is easy to retrofit on existing tanks with minimal changes. It provides a lower cost of ownership and a reliable migration plan for the entire plant. Endress+Hauser offers a wide range of level technologies in order to provide the best solution for the application. Our technicians will also provide you with on-site service and support. Let us be your single source supplier from mechanical design, electrical design, system integration, instrument commissioning and system start-up.



NMS5 application



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