

# Refinery Improved Throughput with Wireless Differential Pressure Flowmeters

## RESULTS

- Improved refinery product inventory monitoring
- Minimized capital expenditure
- Improved throughput



## APPLICATION

Production rate measurements for diesel and kerosene jumper lines

## CUSTOMER

Leading oil refinery in Southeast Asia

## CHALLENGE

This refinery did not have real time production flow rate measurements on newly constructed diesel and kerosene jumper lines.

Being an old and very congested refinery, it was difficult and costly to install flow measurement points for the newly constructed diesel and kerosene jumper lines. Due to space limitations in the marshalling cabinets, junction boxes, and I/O limitations in the legacy control system, this installation appeared cost prohibitive.

Lack of production rate information for new diesel and kerosene products was causing inventory monitoring problems. This led to significant financial implications in terms of both expected revenue and profitability from these new products. However, the capital cost for installing additional wired inputs to the existing control system was quite high. Space constraints also prevented installation of traditional orifice plates for the flow measurements points due to the required upstream and downstream straight pipe run lengths.

## SOLUTION

Two Rosemount 3051S Wireless DP Flowmeters, part of Emerson's Smart Wireless Solutions, were installed on the new diesel and kerosene product lines at minimal additional capital cost. The self-organizing technology eliminated the need to wire new measurement points. This solved the problems related to the existing control system expansion and capital constraints associated with this difficult installation.

In addition, a Rosemount Compact Conditioning Orifice Plate was installed as the primary element on the diesel jumper line. The Compact Conditioning Orifice Plate only required 2 diameters straight pipe run both upstream and downstream, resulting in no additional changes to the current pipe.

*The Rosemount 3051S Wireless DP Flowmeters with Compact Conditioning Orifice Plate technology allowed production tracking of two new distillate products at minimal additional capital cost.*



*Rosemount 3051S Wireless with integrated Compact Conditioning Orifice Plate technology*

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The Rosemount 3051S Wireless DP Flowmeters allowed this refinery to significantly improve inventory monitoring of new products, diesel and kerosene, at minimal additional capital cost. This improved revenue and profitability estimation for these new products.

Also, the real time production tracking and operational adjustments of the new products led to improved throughput. Finally, the combination of Emerson's Smart Wireless and Rosemount Conditioning Orifice Plate technology minimized the capital cost needed to have real time production flow rate measurements.

### RESOURCES

#### Emerson's Smart Wireless

<http://www.EmersonSmartWireless.com>

#### Rosemount Compact Conditioning Orifice Plate

<http://www.emersonprocess.com/rosemount/products/flow/m405p.html>

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