

# Juice Manufacturer Optimizes Steam Measurements and Reduces Usage with Reducer™ Vortex Technology

## RESULTS

- Reduced installation costs by 37%
- Accurately measured steam at low flow rates
- Reduced energy costs by 5%

## APPLICATION

Steam flow measurement in the main steam header to evaporator and pasteuriser

**Application Characteristics:** Fluid: Steam, Pressure: up to 12 bar, Temperature: 160 to 180°C

## CUSTOMER

Juice/carbonated drink manufacturer

## CHALLENGE

Accurate steam measurement is important for ensuring satisfactory operation of the evaporator and pasteurisers used in juice manufacturing. Monitoring steam used by each process unit during production is required so that the most efficient units are used whenever possible, and the less efficient units are identified so that they can be improved. During this manufacturer's normal operation, the steam demand varied, occasionally resulting in steam flow rates below a traditional vortex meter's measurement capabilities. This inability to measure the lower flow rates resulted in increased energy costs and a poor energy balance for this process.

## SOLUTION

The Rosemount 8800 Reducer™ Vortex Flowmeter is used to measure flow rates in both the main steam header and at the inlet to the evaporator and the pasteuriser units across the entire operating range.



*The Rosemount 8800 Reducer™ Vortex was easy to install with no pipe changes, and accurately measures lower steam flow rates.*



*The Rosemount 8800 Reducer™ Vortex Flowmeter.*

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The 8800 Reducer™ Vortex Flowmeter was selected as it could be installed in the original pipes without major modification, reducing installation costs by 37%. The Vortex Meter was able to measure the relatively large variation in flow rates determined by the demand for steam within the plant, ensuring that steam flow was being accurately controlled, improving the performance of the evaporator. By monitoring steam usage it was possible to reduce energy costs by 5% ensuring efficient steam generation and use throughout the plant. The ability to measure the full operating flow range also resulted in the identification of other inefficient units for further optimization.

### RESOURCES

#### For More Information:

<http://www.emersonprocess.com/rosemount/document/datasheets.html>

<http://www.emersonprocess.com/rosemount/products/flow/m8800cr.html>

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