

# 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%



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

## APPLICATION

HTST juice pasteurization timing system

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

## 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 pasteurizers 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 pasteurizer units across the entire operating range.



*The Rosemount 8800 Reducer™ Vortex Flowmeter.*

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For more information:  
[www.rosemount.com](http://www.rosemount.com)

  
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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

#### Emerson Process Management Food & Beverage Industry

<http://www2.emersonprocess.com/en-US/plantweb/customerproven/Pages/FoodBeverage.aspx>

#### Rosemount 8800 Reducer Vortex Flowmeter

<http://www2.emersonprocess.com/en-US/brands/rosemount/Flow/Vortex-Flowmeters/8800-Reducer/Pages/index.aspx>

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**Emerson Process Management  
Rosemount Inc.**  
8200 Market Blvd  
Chanhausen, MN 55317  
**www.rosemount.com**  
Tel (USA) 800 522 6277  
Tel (International) +1 (303) 527 5200  
Fax +1 (303) 530 8459

**Emerson Process Management**  
Blegistrasse 23  
P.O. Box 1046  
CH 6341 Baar  
Switzerland  
Tel +41 (0) 41 768 6111  
Fax +41 (0) 41 768 6300

**Emerson FZE**  
P.O. Box 17033  
Jebel Ali Free Zone  
Dubai UAE  
Tel +971 4 811 8100  
Fax +971 4 886 5465

**Emerson Process Management Asia  
Pacific Private Limited**  
1 Pandan Crescent  
Singapore 128461  
T (65) 6777 8211  
F (65) 6777 0947  
Enquiries@AP.EmersonProcess.com

**Emerson Process Management Latin America  
Multipark Office Center**  
Multipark Office Center  
Turrubares Building, 3rd & 4th floor  
Guachipelin de Escazu, Costa Rica  
T+(506) 2505-6962  
[international.mmicam@emersonprocess.com](mailto:international.mmicam@emersonprocess.com)

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For more information:  
[www.rosemount.com](http://www.rosemount.com)



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