

Paper Mill Reduces Risk of Environmental Impact with Ultrasonic Technology

RESULTS

- Reduced risk of environmental impact
- Prevented mill shutdown
- Minimized capital expenses



APPLICATION

Surface water drains and storm water flow measurement

CUSTOMER

A paper mill in the United Kingdom

CHALLENGE

This paper mill received a formal request from the local Environmental Agency to comply with their Pollution Prevention Control (PPC) permit. The permit required this mill to measure surface water run off and storm water flows from their site.

Previously, there was no flow measurement on the site due to accessibility to the complex drainage system. The runoff flows through an effluent treatment plant and then into a local river. The only access to the main discharge pipe is via a circular concrete manhole chamber (see Figure 1). Without a flow measurement, the paper mill did not comply with the local Environmental Agency. With limited accessibility the mill faced high capital costs to become compliant with the local regulations.

SOLUTION

A Rosemount 3102 ultrasonic level transmitter with a remote temperature sensor enabled this customer to easily comply with the site's permit with minimal piping alteration. Using the existing manhole chamber the customer created a level measurement used to calculate flow. A stainless steel 90 degree 'V' notch weir plate (see Figure 2) was installed into the chamber so that the 3102 calculated flow using the internal library of flow profiles.

The remote temperature sensor used for speed of sound compensation provided precise measurement of ambient air temperature in the chamber to ensure accurate measurement of level. In addition, the 3102 was mounted on a Calibration Reference Plate (CRP) (see Figure 3), which enabled the customer to perform periodic checks on the system to ensure the level transmitter is reading correctly.

Installation was made using the existing structure, saving both time and money.



Figure 1. Manhole chamber showing original pipe running directly through the chamber

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Using innovative implementation practices with the Rosemount 3102 the paper mill complied with local regulations and reduced the risk of environmental impact and mill shutdown. By using their existing drainage system, the customer was able to minimize their capital expenses to become compliant with the regulation.

RESOURCES

Emerson Process Management Pulp and Paper Industry

<http://www.emersonprocess.com/solutions/paper/>

Rosemount 3100 Series Ultrasonic Level Transmitters

http://www.emersonprocess.com/home/news/pr/707_3100.html

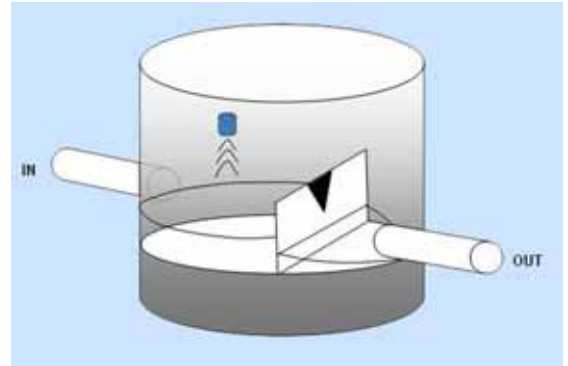


Figure 2. "V" Notch design concept



Figure 3. Final Installation with calibration plate and remote temperature sensor

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Emerson Process Management

Rosemount Division
8200 Market Boulevard
Chanhausen, MN 55317 USA
T (U.S.) 1-800-999-9307
T (International) (952) 906-8888
F (952) 949-7001

www.rosemount.com

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

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

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For more information:
www.rosemount.com


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