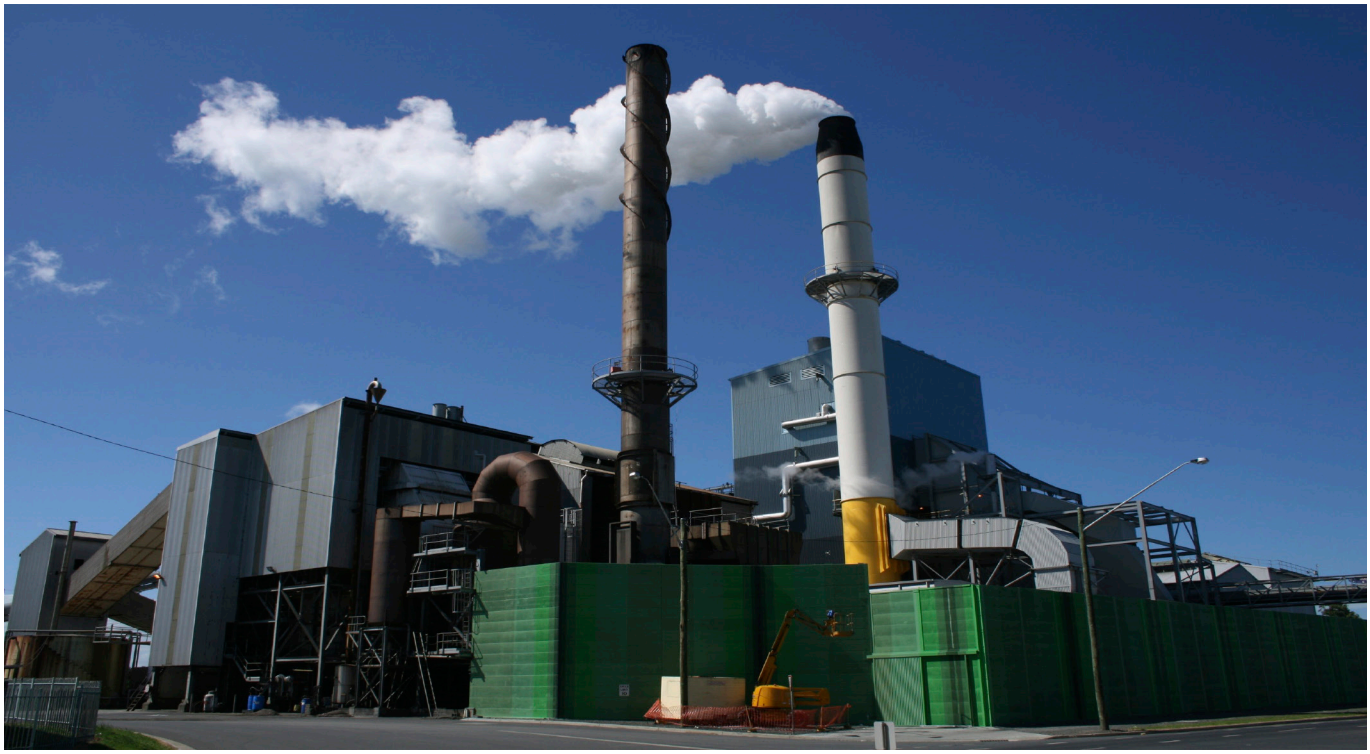

APPLICATION NOTE

Food & Beverage

Level measurement of condensate in a sugar refinery

- Level measurement of return condensate
- Reduction of dead zones in the process
- A responsive and reliable measurement

1. Background

The company specialises in the primary processing of beet root into sugar. Sugar refineries run separation processes to isolate the sugar from the other components of the beet root. This separation is made up of a series of steps including reception, washing, extraction by diffuser, purification and filtration, evaporation and crystallisation, drying and packaging.

2. Measurement requirements

In the manufacturing process, the syrup is concentrated through evaporation under vacuum. The condensate are recovered in a return circuit. Its level must be regulated so the created vacuum is not disturbed.

In the past, the customer had used magnetic bypass level indicators from a competitor to measure condensate levels. Given the effect of the process conditions on the existing instrumentation, the customer had to regularly replace the floats due to deformation and holes.
The safety of the process could thus no longer be guaranteed.

KROHNE

3. KROHNE solution

KROHNE recommended replacing the floats with 9 OPTIFLEX 2200 F level transmitters featuring coaxial sensors with a 22 mm / 0.87" diameter, for a total height of 1200 mm / 47.2 inch. The customer kept the chambers of the level transmitters and simply removed the floats and the magnetic components.

Thanks to their measurement responsiveness, the OPTIFLEX 2200 F helped avoid recurring problems when starting up the sugar refinery.

KROHNE recommended coaxial sensors in order to reduce dead zones, thus securing the installation across a broader measuring range than possible with the float technology.

The OPTIFLEX 2200 measures the level of return condensate

4. Customer benefits

The customer has overcome the mechanical constraints associated with floats. By installing the OPTIFLEX 2200 F guided radar level transmitters, the customer obtained more accurate readings while simultaneously increasing the measuring range. The remote version permits local readings, making it easy for the operator to monitor the condensate. In addition, the transmitters could be easily installed on top of the existing bypass chambers.

OPTIFLEX 2200 guided radar (TDR) level transmitters

5. Product used

OPTIFLEX 2200 C/F

- 2-wire loop-powered HART® guided radar (TDR) level meter for liquids and solids
- Horizontal or vertical positioning of housing
- The converter can be installed up to 100 m / 328 ft from the sensor
- Measuring distance up to 40 m / 131 ft

Contact

KROHNE S.A.S.
2, Allée des Ors
BP 98
26103 ROMANS SUR ISERE CEDEX
France
Tél. : +33 475 056 703
Fax : +33 475 050 048
level@krohne.com

Please visit our website for a current list of all KROHNE contacts and addresses.

www.krohne.com