

LMS200 magnetic level switch

Reliable solution to keep sugar at a safe level



Managing hazardous or non-hazardous chemical storage inventory requires safe and reliable level measurement solutions.

Measurement made easy

Precise level control of chemical storage tanks

Introduction

The sugar industry is well-established and sugar production is an energy intensive process. A typical sugar plant requires 8 to 10 MW of power. Almost all sugar plants have to be self-sufficient and generate the energy they need in their own power plants.

As in any other plants, corrosion is one of the main causes of reduced reliability in steam generating systems. It is estimated that problems due to boiler system corrosion cost industry billions of dollars per year.

In boiler applications, the feed-water is typically alkalinized to a pH of 9.0 or higher, to protect from internal corrosion by reducing oxidation and initiating the formation of a stable layer of magnetite on the water-side surface of the boiler. This is usually done by dosing alkaline agents into the feed water, such as sodium hydroxide (caustic soda).

Safely and reliably managing hazardous and non-hazardous chemical storage inventory and replenishment is critical to ensure a economical operation of the steam generating systems.

Providing such a reliable and safe level measurement system in a boiler application is accomplished by an integrated level measurement and control system comprising:

- KM26 magnetic level gauge for a continuous visual level indication
- LMS series magnetic level switch externally integrated with the KM26 chamber for pump control and/or alarm annunciation and
- optional LMT series transmitter for a continuous level measurement with 4 to 20 mA HART output for automated control through a PLC/DCS system



The challenge

A sugar plant in Louisiana, USA needed an upgrade of their level controls for their #6 boiler. A magnetic level gauge was used to measure the sodium hydroxide chemical stored in the tank used for the boiler feed water treatment. The customer had competitor switches which did not perform well due to the vibration from heavy equipment that caused false change of state. The switches were connected to a PLC to monitor the level and control the pumps.

Our solution

ABB proposed to replace the existing switches with the new LMS200 magnetic level gauge switch to be mounted on the existing chamber. The superior design helped the customer to easily integrate three new LMS200 switches that met all the required dimensions and process connection orientation. ABB was able to provide the exact solution required by the customer.



Old competitor switches (left) and new ABB LMS200 switches (right)



LMS200 magnetic level gauge switch

Customer response

Mr. Justin McNease from M-Tec / Rise, Inc., a valued ABB partner, supported the end customer through this campaign and informs that the customer completed the 2017/2018 grinding campaign with the switches performing as expected. No false change of state occurred during this campaign, ensuring the plant availability and productivity.

The end user testimony echoes with ABB's customer centric approach:

“The technicians were pleased with the spacious housing design to effortlessly terminate the connections.”

Mr. Justin McNease – M-Tec / Rise, Inc.



Improved and safe wiring terminal

LMS200 – features and benefits

- superior chassis and wiring terminal design
- DPDT switch with max. 250V AC / DC, max. 10 A contact rating
- powder coated copper free aluminum enclosure, IP67/NEMA4X rated, standard ¾ in. FNPT electrical cable connection
- ATEX/IECEX, cFMus approvals
- weather proof switch compartment
- reduced dead-band and increased operating distance of the float
- lesser actuation force needed
- reliability and longer life
- integrated user-friendly rod mount design
- adjustable along length of KM26 or other chambers
- modular, replaceable, serviceable core mechanism assembly (no longer a 'throw away' design)
- internal and external grounding terminals
- ABB common look and feel

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