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High pressure measurement products help reduce fuel usage and minimize maintenance

Rugao Shuangma Chemical Co.

ABB pressure transmitters help give competitive edge to fatty acid chemical manufacturing company in China

Measurement made easy

High pressure measurement products help reduce fuel usage and minimize maintenance

Introduction

Rugao Shuangma Chemical Co., located in China's town of Dongchen in the province of Jiangsu, specializes in manufacturing fatty acids and its various derivatives. The company is one of the largest suppliers of these products, with yearly output of Duanma brand stearic acid of 100,000 tons, fatty acid 50,000 tons, glycerin l0,000 tons, oleinic acid 5,000 tons and stearic acid salts 5,000 tons. The main ingredient of many of these products is palm oil from Indonesia.

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Refining process

The various palm-oil derived products first undergo a refining process leading to production of solid and liquid fractions. One end result is a refined, bleached, deodorized palm oil sold on the world's commodity markets for making such products as soaps, shampoos and washing powder. Part of this process involves reacting hydrogen gas with the palm oil while subjecting it to heat and pressure. Called catalytic hydrogenation, this process makes the palm oil more solid at room temperature.

Shuangma Chemical has developed a proprietary version of this process that uses less fuel for heating, giving it a competitive edge. According to the plant's Chief Engineer, Mr. Shu, typically one ton of product requires the burning of 350 kilograms of coal. "Our special process uses only 150 to 175 kilograms of coal, a savings of nearly 60 percent," he says.

Raw palm oil

Mr Shu at the plant

Shu says that this unique process depends heavily on highly accurate pressure measurement. About 200 pressure transmitters monitor the hydrogen and various other key sections of the process. “We tested the performance of several makes of pressure transmitters from leading manufacturers,” he says. “ABB’s 2600T series of pressure transmitters came out on top.”

Installed ABB 2600T pressure transmitters

Aside from the critical process requirement for extremely high pressure measurement accuracy, Shu notes that reliability and safety also served as a key selection factors. “This process is continuous,” he says. “We schedule only one shutdown per year for maintenance. If the plant must shut down for any other reason, we could suffer losses of hundreds of thousands of US dollars. And because of the inflammatory nature of hydrogen gas, safety is a primary concern.”

Products being loaded onto a truck

Currently Rugao Shuangma Chemical is the No. 3 producer in the world of these kinds of palm oil products. And the company fully intends to become No. 1 with plans for an additional plant. Fuel savings from its proprietary process gives it a promising competitive edge.

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