

# Titanium Dioxide Pigment Manufacturer Increases Plant Availability with SmartPower™

## RESULTS

- Increased plant availability
- Lowered maintenance and energy costs
- Reduced risk of low product quality



## APPLICATION

Rotating calciner temperature measurement and control

## CUSTOMER

Large chemical manufacturer in Southeast Asia

## CHALLENGE

This titanium dioxide manufacturer had difficulty controlling a constant material temperature within their rotating calciner. The rotating calciner, which is about 40 m (131 ft.) long, has five temperature measurement points. The midpoint of these temperature measurements is used for burner control of the calciner.

The wireless temperature transmitters previously installed were purchased from a non-Emerson vendor. The devices on the calciner required frequent maintenance due to low battery life. Due to the rotation and vibration of the calciner, batteries often became misaligned. This caused intermittent measurement and resulted in soldering the battery connections. The batteries needed to be changed every one to two months because of low battery life.

The low battery life led to frequent shutdowns. These frequent shutdowns increased energy use and other operating costs. Maintenance costs were high, due to frequent battery replacement and damage to the kiln refractory liner. Inaccurate temperature measurements caused poor burner operation, which led to higher fuel consumption and higher emissions. Poor burner operation also risked low product quality.

*The Rosemount 648 Wireless Temperature Transmitters allowed this pigment manufacturer to significantly improve availability of their rotating calciner and reduce unscheduled shutdowns.*



*The Rosemount 648 WirelessHART Temperature Transmitter*

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## SOLUTION

This customer's problem was solved with five new Rosemount 648 Wireless Temperature Transmitters. The Rosemount 648 utilizes Emerson's SmartPower™ technology, which significantly reduced the amount of time spent replacing the batteries. Intervals between battery replacement were increased by more than a factor of 10. The keyed connection feature eliminated alignment concerns and soldering requirements during battery replacement. Also, the self-organizing field network, provided exceptional data reliability and easy installation. The SmartPower technology also features an intrinsically safe power module that allowed field replacements without removing the transmitter from the process.

The Rosemount 648 Wireless Temperature Transmitters allowed this pigment manufacturer to significantly improve the availability of their plant and reduce unscheduled shutdowns for battery replacement. Also, maintenance costs decreased due to a reduction in trips to replace batteries and the kiln refractory liner. Energy costs decreased because the plant continued to operate at peak performance levels. In addition, having a reliable temperature control of the calciner resulted in reduced risk of low product quality, lowered fuel consumption, and decreased emissions.

## RESOURCES

### Emerson Smart Wireless

<http://www.EmersonSmartWireless.com>

### Rosemount 648 Transmitter

<http://www.emersonprocess.com/rosemount/document/pds/00813-0100-4648.pdf>

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