

BlueScope Increases Continuous Measurements and Decreases Blast Furnace Downtime with Rosemount™ 848T Wireless Transmitters

RESULTS

- Increased uptime due to shorter shutdown windows
- Eliminated cable runs which had been required to be removed/replaced at each shutdown
- Better real-time information and diagnostics from devices
- More flexible location of temperature measurements

APPLICATION

Dense steel and concrete infrastructure operating in hot, moist, and dusty environment.

CUSTOMER

BlueScope in NSW Australia

CHALLENGE

Access to the outer shell of the furnace was a continual safety and logistical problem during shutdown periods as large cable trays and multiple thermocouples/RTD cables running around the furnace shell needed to be removed to gain access to the furnace shell. Large scaffolding and many man hours were required to remove and reinstall the tray and cables each shutdown.

The removal and reinstallation of the cables was also a Health, Safety and Environmental (HSE) concern. The cable trays are located against the wall of the blast furnace. This is a very hot environment; burns and dehydration are both serious risks. Doing this work often means erecting scaffolding in a very tight space with little room to move. It takes significant time to erect the scaffolding, considering the closeness to the furnace. The cables and trays are also very heavy to move, also making them a safety concern.

As part of a 24/7 operation with the goal of keeping shutdown periods to a minimum, the removal and reinstallation of the cable trays seriously cut down on the furnace availability. It also meant that continuous measurement, which is required to ensure the furnace is operating at optimal temperature, was compromised.

SOLUTION

BlueScope fully evaluated several types of wireless temperature devices to meet the demanding requirements of a harsh environment. BlueScope replaced wired devices with Rosemount 848T Wireless Transmitters from Emerson™ allowing permanent removal of the cable trays. They no longer had to remove and replace the cable trays during



“The introduction of Emerson Wireless in our plant has had many benefits. It has saved us a great deal of time and money in removal and reinstallation costs during shutdowns, while still maintaining the reliability and continuity of the hard wired system. The flexibility of the system has allowed us to measure points that have been either too difficult or too expensive to access.”

Geoff Fisher

Blast Furnace Automation Engineer



Rosemount 848T Wireless Transmitter installation

shutdown periods to access the outer shell of the blast furnace. This provided big improvements in turnaround times and labor costs and minimized health and safety risks associated with the labor intensive removal and replacement of the cable trays and cables in a hot environment. Using this system has also resulted in savings in excess of \$60,000 per shutdown in labor and equipment costs.

The Emerson Smart Wireless option was the one solution that met all BlueScope's requirements. The Rosemount 848T Transmitters replaced existing hard wired thermocouples and RTDs. This allowed for increased HART® variables to monitor the health of primary elements and temperature devices.

The wireless devices gave BlueScope the ability to monitor measurement points that were previously too costly to access, improving the plant's availability. Emerson's wireless instrumentation also increased availability as it utilizes self-organizing networks to ensure measurement information will always be available. Self-organizing networks automatically optimize connectivity to achieve greater than 99 percent data reliability.

The Emerson Smart Wireless Gateways have a proven redundancy feature to ensure continuity of signal at all times. The robust nature along with the cost effectiveness of the four-channel device means the customer is able to look at more than 300 temperature signals on the furnace shell. This also means a safer environment for the workers.

"It is exciting experiencing the improvements to the process that are now possible by being able to monitor and compare many new variables quickly, inexpensively and accurately."

RESOURCES

Emerson Process Management Metals and Mining Industry

EmersonProcess.com/Industries/Metals-Mining

Rosemount 848T Wireless Temperature Transmitter

EmersonProcess.com/Rosemount/Wireless/848T

Emerson Smart Wireless Gateways

EmersonProcess.com/Rosemount/Smart-Wireless-Gateways

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