

# Glass Furnace Temperature Upgrade Saves \$31,000 and Reduces Maintenance

## RESULTS

- Saved \$21,000 in labor costs
- Saved \$10,000 in material costs
- Reduced calibration frequency
- Improved accuracy and process throughput

## APPLICATION

Glass furnace temperature monitoring and control

## CUSTOMER

Manufacturer of glass products in North America

## CHALLENGE

The manufacturer upgraded 12 vapor deposition furnaces which they use to produce high quality glass products. The re-instrumentation of these processes was done in an effort to improve product quality, increase product throughput, and lower their overall operating costs.

The temperature application on each furnace consists of 16 monitoring points, eight non-critical control points, and one critical control point. Four furnaces are located in an area of about 200 feet end-to-end, and each temperature sensor measurement is an average of 150 feet from the DeltaV™ I/O cabinet.

## SOLUTION

The manufacturer selected the Rosemount 848T Eight Input Temperature Transmitter to communicate the thermocouple measurements. The measurements were used to monitor and control the non-critical air, oil, and water zone temperatures at different locations throughout the furnace. Each transmitter uses eight Analog Input (AI) function blocks to communicate the measurements on the fieldbus segment.

The Rosemount 3244MVF Temperature transmitter is used to control the inlet temperature of the raw material. Due to the critical nature of this measurement, the manufacturer used the 3244MVF's Hot Backup®, Transmitter-sensor Matching, and Sensor Drift Alert features to improve accuracy and process throughput.



*“The transmitters were easy to install... changing thermocouple types has been a piece of cake. Things have been up and running very well since startup.”*

Supervisor of Control Engineering and Information Technology



For more information:  
[www.EmersonProcess.com/Rosemount/](http://www.EmersonProcess.com/Rosemount/)



The Sensor Drift Alert feature tells the manufacturer when the critical temperature control point requires recalibration. Each 3244MVF uses two AI's, one PID, and one Input Selector (ISEL) function block along with the Backup Link Active Scheduler feature. As a result, the manufacturer estimates that the 848T and 3244MVF transmitters save them 940 man-hours per year due to reduced calibration frequency. This translates to approximately \$21,000 annually.

For the temperature monitoring application, the manufacturer compared an 848T installation against wiring the thermocouples directly into the DeltaV thermocouple I/O cards. They chose to use the 848T for this project because it was a more cost-effective solution. They were able to connect existing sensor wiring to the transmitters to simplify their wiring and significantly reduce installation costs.

The manufacturer estimates that the 848T solution saved them \$10,000 on the re-instrumentation of the 12 vapor deposition furnaces. The savings were realized by using the 8484T on the Fluoride Crystal process that had a very high concentration of expensive thermocouple wire. The wide variety of sensor input types and ability to accept eight sensors per transmitter provided significant savings by using the Rosemount 848T.

The Supervisor of Control Engineering and Information Technology at the plant said, "The 848T offered us a very clean solution for our temperature monitoring application. The 848Ts were easy to configure... changing thermocouples has been a piece of cake. Things have been running very well since startup. To date, the 848T solution has been supplying us with very accurate results." He is now looking at leveraging his experience with the 848Ts on the vapor deposition furnace and applying it to new processes in the plant.

*Note: The Rosemount 3244MVF Temperature Transmitter has been phased out by Emerson and replaced by the Rosemount 3144P Temperature Transmitter*



### RESOURCES

#### Rosemount 848T

<http://www.emersonprocess.com/rosemount/products/temperature/m848t.html>

#### Rosemount 3144P

<http://www.emersonprocess.com/rosemount/products/temperature/m3144p.html>

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