

## Application

Real Time Air Compressor performance monitoring

## Goal

Ensure optimum compressor performance and reduce the energy consumption

## Sector

Chemical Industry

## Customer

Chemical Production Company



# Ensuring Optimum Compressor Performance By Using Real-Time Compressed Air Flow Monitoring

In the chemical manufacturing industry

## Overview

Rotary screw air compressors are the commonly used compressor types in the manufacturing industry. They are known for a higher energy efficiency and provide a cleaner air quality compared to piston type compressors. However, routine maintenance is needed to ensure continuous performance at a high level of efficiency.

## Approach

The chemical company has been working tirelessly to improve their factories energy efficiency while reducing their CO<sub>2</sub> emission and energy costs.

The compressed air system, and especially the air compressors have been identified as one of the greatest potential within their energy efficiency and CO<sub>2</sub> reduction program.

To get a picture of how much energy the air compressors were consuming and how efficient they were operating, SUTO iTEC began to install SUTO **S430 Wet Air Flow Meter** to monitor the air delivery of the compressors. To log the flow and consumption data, they used the SUTO **S331 Data logger** to connect multiple flow meters to a centralized system. Furthermore, the S331's integrated Ethernet output allowed them to send the real-time data to the centralized monitoring system.

After more than a year of logging the data, the installed S430 compressed air flow meters delivered precise and seamless real-time data about the use of the compressed air and the efficiency of the monitored compressors. This data helped the operators to know exactly when maintenance needed to be carried out on the compressors.

For example, the S430 meters reported a 5% drop of flow at one of the compressors. By recognizing this, the operator was able to immediately investigate on the root cause. It was found that the inlet filter mats were clogged and the compressor was not operating efficiently anymore. After replacing the filter mats, the compressors output went up again and the normal operation continued. This saved energy and would not have been recognized without a real-time monitoring system.

## Products In Use



S430 Wet Air Flow Meter



S331 Data Logger

## Conclusion

The real-time flow monitoring, using the SUTO S430 wet air flow meter and S331 data loggers, helps the company to identify problems and degrading at an early stage by monitoring Flow, Pressure, Temperature and Consumption. With this system in place, the plant managers can act immediately to prevent:

### 1. Decreased Flow output

Mainly caused by faulty compression elements, drive system and clogged filters

### 2. Increased Air Temperature at the output

Caused by faulty coolers, overheating compressor elements, lack of lubrication, improper ventilation and others.

### 3. Decreased Compressed Air Pressure

Often caused by faulty compression elements and clogged filters or non-working separators.

By setting up alarm thresholds for Flow, Temperature and Pressure in their monitoring solution, the operators received immediately notifications about performance degrading in their compressed air system. This enabled the chemical company to act immediately and to prevent energy losses caused by inefficient performance.

**"Our plant operators can now have greater confidence in the compressed air system efficiency."**



Be smart. Measure it.