

What is your air compressor trying to tell you?



When good compressed air equipment goes bad

By Ron Marshall

Over the years, many well-meaning companies have taken advantage of utility incentives to upgrade their compressed air system for premium efficiency. Sure, the new equipment costs more to buy, but the additional costs are usually paid for through lower electrical costs, or so you were promised. But sometimes things go wrong: Equipment is not set up correctly or malfunctions occur shortly after installation, for example. And if you don't have proper monitoring equipment or monitoring strategies in place, you may not receive the savings you expected.

To prove your savings, you must ensure that you or someone competent measures your baseline pressure, energy, and flow to capture your plant profile before your project, so that you'll be able

to compare against the conditions after the project. When the project is complete, the baseline must be recaptured and savings calculated in the same manner.

Sometimes you won't achieve the expected savings. There can be many reasons for this, and having some accurate baseline numbers can help you sort it all out and possibly troubleshoot and fix the issues. Some common problems:

- New equipment doesn't operate correctly because of settings problems
- New equipment has failed or energy savings features have not been correctly activated
- Plant flows have changed
- Plant pressure has increased,
- Significant new leakage has occurred
- There are seasonal changes in

the plant flow, and the baseline was captured during different conditions

- One or more production shifts has been added.

An example of one or more of these points comes courtesy of a wire manufacturer who during a plant tour proudly displayed his new variable-frequency drive air compressor. The compressor control had a screen that showed a histogram of the number of hours the compressor had spent at different percentage loading. The information collected showed the unit had been at 100% load for all of its operating hours - a very poor application of this technology. The customer had no idea, and presumably the salesperson who sold the compressor and set it up had no clue either. A simple change in the compressor pressure settings solved this issue.

Another example was with a food processor that purchased an expensive high-efficiency desiccant air dryer when its plant was built. Many years later, after experiencing constant problems with the dryer, a compressed air auditor placed

monitors on the system and discovered efficiency problems. A careful inspection revealed that the dryer had been assembled incorrectly and had never worked properly in the first place. A simple change to the wiring solved this problem.

During my time with a power utility, it was my job to verify the correct installation of new energy-efficiency equipment, and doing

pre and post-monitoring headed off many of the problems listed in the bullet points. I found that it's always best to expect the unexpected and check your installation both before and after some major work is done. Make sure you measure as you go along so you can ensure you're getting what you paid for. If something isn't up to snuff, you'll be able to prove that corrections are required.

You can get help with this by calling a reputable compressed air service provider - preferably someone who has attended a Compressed Air Challenge level 1 or 2 seminar. Learn more about compressor monitoring at Compressed Air Challenge's next Fundamentals of Compressed Air Systems seminar.

Check out the calendar at www.compressedairchallenge.org.

What is your air compressor trying to tell you?

Learn how cellular connectivity can benefit you and your company

□ Cellular connectivity has become a reality in many industries, and it soon may be coming to a compressor room near you. Here's how it works: Your air compressor sends information to a cellular modem. The modem then sends a signal to the cloud, which utilizes software to provide users with actionable insights into their compressed air system.

In a recent Plant Services webinar, John Smithey, connectivity manager for Quincy Compressor, explored how cellular connectivity lets users save money on energy costs, improve service levels, and avoid downtime.

INCREASED MACHINE AVAILABILITY

One benefit of cellular connectiv-

ity is its ability to increase machine availability. Cellular connectivity helps users understand what's going on with their machines without having to be on the plant floor. Based on the real-time data users receive from the machines, users can analyze the event prior to the visit and make sure all necessary parts are available. This allows users to resolve issues faster. Cellular connectivity can even notify users when a machine is due for service. Said Smithey, "We've seen in our industry that connected machines will offer you 16 more days a year of availability."

The use of cellular connectivity can help you minimize your risk for

machine breakdown. Downtime can be planned according to the production schedule, so it won't inhibit your ability to make product.

CELLULAR CONNECTIVITY IN ACTION

Cellular connectivity can also be used to monitor your entire system, analyze demand swings, calculate process efficiencies, record benchmarks, and much more. Here are a few common situations that can be improved with cellular connectivity.

Example 1: Assume we have a typical compressor room with three compressors. Cellular con-

nectivity data shows that the machines are running at partial capacity, 50%. With this new information, you can decide to turn a compressor off and save money, or you can also decide to investigate what's causing the issue. Is it artificial demand? Is it an issue with flow or system pressure? Do we need to add more storage?

Example 2: After pulling the cellular data, you realize that the air compressor system is using 25% more air this week than it was the previous week, even though the plant is producing the same amount of product. Armed with this information, you can conduct

an air audit to see where you're losing air. Is it an air leak in one of the pipes? Are some of the employees not following best practices when using compressed air to clean up their workstations?

Example 3: A plant is running two production lines. When you pull the cellular connectivity data, you see that production line X is using half as much air as the older line Y. Now you have options: You can decide to work on the older machine and drive process improvements on it. You can also overhaul the older production line to bring it up to spec. You can even rework the line or build another one. ■

Slides

Cellular Connectivity Insights-Reduce your energy consumption!

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- Monitor your entire system
- Analyze demand swings
- Calculate process efficiencies
- Calculate kW usage
- Benchmarking capabilities
- Calculate volumes

Performance You Demand. Reliability You Trust.





To learn more about how cellular connectivity can improve your compressed air system, watch the on-demand webinar.

https://info.plantservices.com/quincy-remote-monitoring-compressed-air-cellular-connectivity_ca