



The Remarkable Rewards of Remote Monitoring and the Future of Air Compressor System Maintenance

By CAGI Promotional Subcommittee

Are we close to receiving tweets from air compressor number four on the shop floor? Actually, we've already moved beyond it. Today's technology allows an unprecedented flow of information, 24/7, to multiple locations allowing extraordinary advances in maintenance scheduling, service efficiency, and life extension of the equipment.

Compressor Maintenance, B.C. (Before Connectivity)

In analog days, air compressor maintenance was a hit-or-miss mix of guesswork, mechanical gauges, and luck. Maintenance was performed based on elapsed time first, and actual operating hours, second. As a result, if the equipment ever got the correct attention at exactly the right time it was simply a matter of luck. There was no opportunity for improved energy efficiencies - let alone the potential benefit of anticipating problems before they occur. Magnified by many machines in multiple locations and the problem is a perfect maintenance nightmare.

The Digital "Squeaky Wheel"

Enter the digital age of the networks, the internet, cell phones and texting and possibilities of remote monitoring go from theoretical to practical to where it is today: indispensable. Virtually universal connectivity has unleashed a revolution in maintenance when compressors are equipped with remote monitoring capability. The digital "squeaky wheel" can now get the grease only when it is required and be quietly monitored the rest of the time.

You Cannot Manage What You Cannot Measure

With the best remote monitoring systems, the entire status of the system can be viewed at a glance, as well as each system component. For example, pressure and temperature, lifetime and loaded hours, and alarm status of each component can be read and recorded. Even the service information for individual compressors can be communicated, with all relevant data including service reminders for items such as inlet filter, separator and fluid changes. This facilitates more convenient routine maintenance scheduling.

But remote monitoring can be a two-way street, too. Some systems even allow you to remotely *adjust* parameters such as load and unload pressure settings, drain intervals, unloaded stop time, and other factors.

The benefits are pretty obvious – and impressive:

- The maintenance department knows when they need to schedule maintenance – before it becomes a problem.
- They can create a realistic plan for maintenance that maximizes their limited resources and minimizes their risk of a breakdown and the expensive downtime that would ensue.

Energy Efficiency – Documented, Not Deduced.

Perhaps one of the most powerful arguments for remote monitoring is power itself. The ability to track energy consumption is like having a 24/7 energy audit for every machine. Energy rebates are not only possible but practical when you can provide the utility documented power consumption data crunched anyway they want it. The savings often justifies the purchase of new equipment with monitoring capabilities.

Increased Data: The Best Response to Increased Regulation

Besides extracting rebates from utilities, remote monitoring data can provide assurance in the face of increasing regulatory demands. You can document and archive a perfect “footprint”, by machine, of all performance data and power consumption – all right down to the minute with the right system! You’re covered for the regulatory demands of today – and for the foreseeable future.

Up to the Minute Status – for Everybody Who Needs to Know.

Of course some maintenance departments may choose to sub-contract compressor maintenance to the distributor or manufacturer. Remote monitoring allows off-site service personnel to monitor the system and dispatch technicians when the time is right. An email or text lets them know where and when it’s time to check in on a machine. No wasted time. No guesswork. No unnecessary stops. And with the maintenance department getting copies of the alerts, they can keep an eye on the whole process.

Remote Monitoring the Future

Today, more and more organizations are taking advantage of the potential of remote monitoring for stationary and mobile air compressors. It is easy to imagine that, in the near future, it will be standard equipment rather than an option. Manufacturers will continue to innovate new ways to enhance measurement, monitoring and communications capabilities of machines.

The bottom line is more control over the machine – and the maintenance process. And the “digitization of the mechanical” can lead to an even more proactive approach where the compressor becomes more “intelligent”.

And that is a very intelligent approach to the future.

For more information on maintenance and service or answers to any of your compressed air questions, please contact the Compressed Air and Gas Institute. The Compressed Air and Gas Institute is the united voice of the compressed air industry, serving as the unbiased authority on technical, educational, promotional, and other matters that affect the compressed air and gas equipment suppliers and their customers. CAGI educational resources include e-learning coursework on the *SmartSite*, selection guides, videos and the *Compressed Air & Gas Handbook*. For more information, visit the CAGI web site at www.cagi.org