

New Dresser Control Valve Software Assesses Health of Smart and Analog Control Valves

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Summary

Dresser recently briefed ARC Advisory Group regarding the release of the company's Valscope Pro and ValVue OVD software diagnostic tools for control valves with or without positioners. Valscope Pro, which evaluates and provides diagnostics on control valves installed prior to the digital positioner revolution in 2000. ValVue OVD, on the other hand, is designed to provide diagnostics on the balance of the installed base of control valves equipped with digital positioners, enabling manufacturers to monitor the health of their valves while the process is up and running.

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The majority of the control valves currently in service and installed prior to 2000 are actuated by "dumb" analog positioners, which cannot provide asset health or connect to plant-wide digital communication such as FOUNDATION fieldbus, Profibus, or digital HART networks for on-line diagnostics. Together, Dresser's Valscope Pro and ValVue OVD diagnostic tools enable industrial plants to evaluate and diagnose their entire installed base of control valves still in service.

ValScope Pro Lowers the Total Cost of Ownership of Analog-Actuated Control Valves

ValScope Pro is a health assessment tool focused on servicing the large installed base of analog-actuated control valves. Without the benefit of digital actuation devices, these control valves are unable to connect to plantwide FOUNDATION fieldbus and Profibus networks or HART communications. As a result, these valves cannot be diagnosed on-line using the new generation of asset management solutions. ValScope Pro, however, employs analytic techniques to evaluate and diagnose both analog and digital control valves. This increases production availability and reduces



the amount of money spent on aftermarket services, labor, spare parts, and MRO activities on the valve, all while extending the life of the valve.

In particular, Valscope Pro helps determine if a valve is good or bad without having to remove it from service. When you consider that the cost to remove and repair a valve can range anywhere from \$6,000 to over a \$1 million after factoring in all the hidden costs, Valscope Pro's ability to avoid removing valves unnecessarily can more than pay for itself by helping a manufacturer avoid a single unnecessary removal. ValScope Pro also benefits manufacturers by verifying that any repairs were done properly and that the repaired valves are returned in optimal operating condition. Furthermore, ValScope Pro can help verify that a manufacturer's installed base of control valves have all been sized correctly and are all operating at or near their optimal efficiency.

Dresser plans to equip its service partners with Valscope Pro to provide their technicians with the needed insight to be able to quickly assess the condition of valves and, when necessary, make appropriate repairs. When Valscope is combined with appropriate application expertise, customers can be assured that only the "bad actors" are repaired. Significantly, Valscope Pro not only works on Dresser control valves, but also can also be used to analyze virtually any control valve, regardless of supplier.

ValVue OVD Offers Real-time On-line Analysis

Despite the numerous benefits of utilizing ValScope Pro, one key drawback is the need to run the diagnostic analysis offline locally at the control valve. ValVue OVD, however, is designed to take advantage of FOUNDATION fieldbus, Profibus, or HART digital field communications. By harnessing the real-time process and equipment diagnostic information available from today's digital devices, ValVue OVD can provide manufacturers with on-line valve diagnostics to monitor valves at their steady state. This allows

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manufacturers to improve plant performance without having to upset the process. In addition, by utilizing the open nature of today's digital networks, ValVue OVD can monitor the health of nearly any valve equipped with a digital positioner, regardless of the positioner's manufacturer. Furthermore, Dresser has integrated ValVue OVD with leading asset

management systems, including AMS from Emerson, PRM from Yokogawa, and Honeywell's Asset Manager solution. As such, ValVue OVD provides an enabling technology for manufacturers trying to tie their many control valves into corporate-wide asset management initiatives to reduce the company's OPEX, improve production availability, and optimize plant integrity.

While valves have long been the most problematic plant automation equipment in terms of maintenance costs and sub-optimal performance, the high cost of digital positioners and the impression that valves are simply "dumb iron" have contributed to the limited adoption of control valves in many asset management initiatives. In addition, due to the highly specialized nature of valve operation, many "off the shelf" asset management solutions do not offer much in the way of operational benchmarking and root cause analysis for valves. However, Dresser, a leading global valve supplier with over 120 years of expertise, designed ValVue OVD from the ground up specifically to address valve performance and health analysis issues. This provides industrial plants that have not already done so, a practical option for including control valves in their overall on-line asset management initiatives.

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This is because the reliability safety loops depends on the availability and reliability of its final control elements. The weak link in most safety loops is the potential non-operability of safety valves. Safety valves account for roughly one-half of the probability of a dangerous failure in process manufacturing. As the final line of defense, emergency shutdown (ESD) valves are critical to minimizing the chance of fires or explosions during process upsets. As shutdown valves are rarely cycled, however, there is always concern over whether they will operate if actually needed. In fact, if these valves are not periodically stroked, it can almost be guaranteed they won't work when called upon. By using ValVue OVD to integrate intelligent safety valves with enterprise-wide digital networks, manufacturers provide operators the tools to exercise their safety valves routinely to ensure operability without affecting production.

Conclusion

Most control valves installed in plants today remain equipped with analog actuating devices incapable of providing real-time valve and process health feedback. By maintaining process variables as near as possible to the set-point, improved valve performance allows manufacturers to run manufacturing operations closer to ideal specifications, thereby increasing production, improving product consistency, and reducing waste of raw materials. Even slight improvements in valve performance can make a significant impact on a manufacturer's bottom line. Without the benefit of true valve health diagnostics and operating efficiencies, however, operations and maintenance personnel can do little to improve valve performance and are forced to react to equipment failures and either re-work or dispose of out-of-spec product.

Due to a variety of factors, only a small percentage of manufacturers have adopted even the most basic form of proactive valve maintenance, and most continue to use traditional manual labor-intensive methods to maintain their valves. Valve asset management solutions continue to be predominantly offline systems that require manual data collection in lieu of on-line wired or wireless system. The benefits of an on-line system are well known, but the complexity and infrastructure investments required to implement on-line systems effectively remain intimidating for most plants.

Companies that have historically relied heavily on in-house control valve expertise will need to plan for the mass exodus of experienced workers. As organizations continue to lose expertise, they struggle to remain profitable while cutting costs. Consequently, manufacturers increasingly look for practical solutions that minimize human intervention and provide the on-line instrument health information needed to implement a proactive maintenance strategy with a minimal amount of training and in-house valve expertise.

Dresser's new suite of software products for service partners and end users address these issues.

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