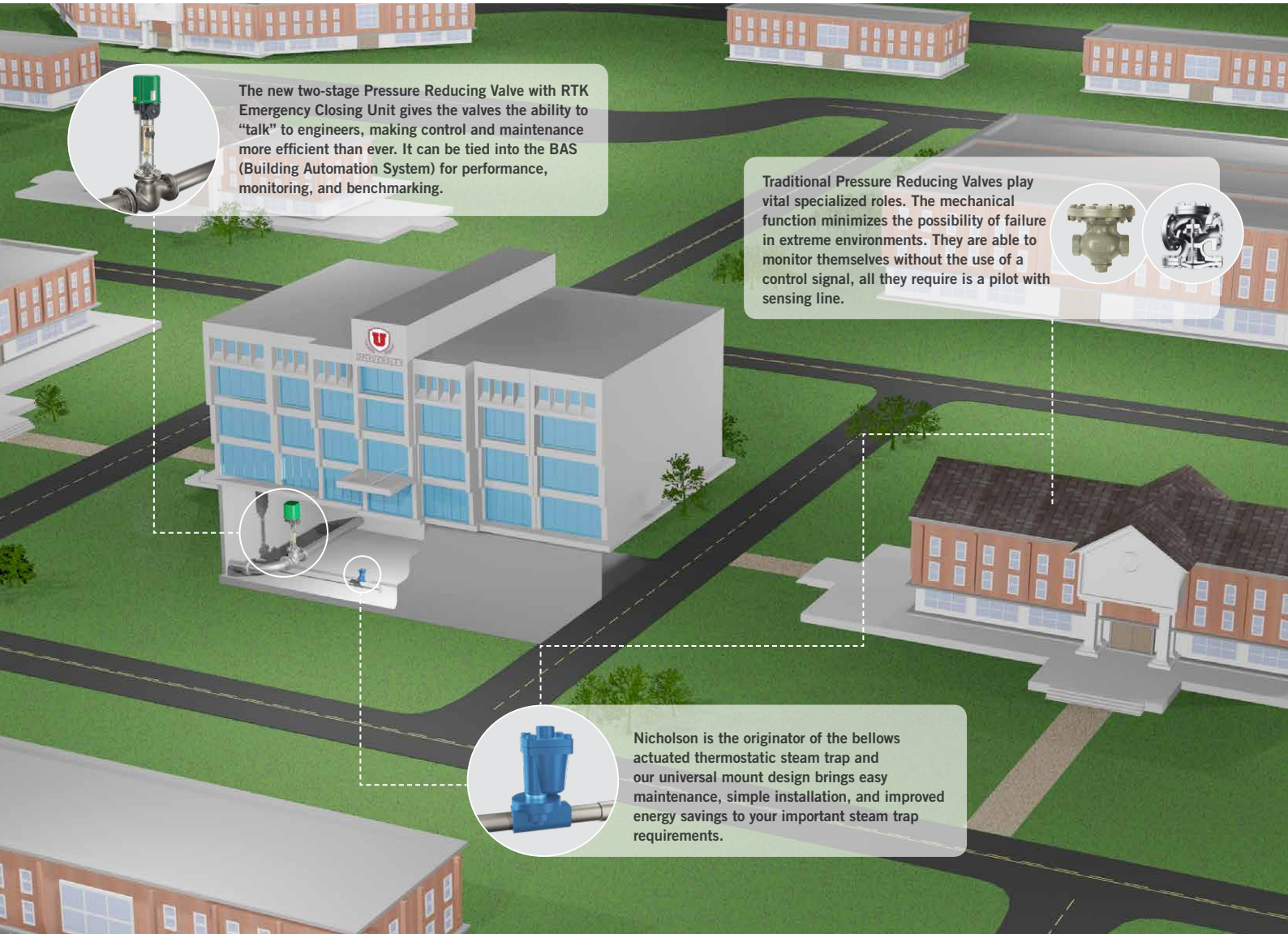
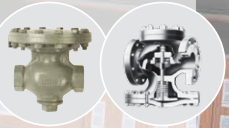


ELECTRONIC AND TRADITIONAL STEAM SOLUTIONS FOR CAMPUSES



The new two-stage Pressure Reducing Valve with RTK Emergency Closing Unit gives the valves the ability to “talk” to engineers, making control and maintenance more efficient than ever. It can be tied into the BAS (Building Automation System) for performance, monitoring, and benchmarking.

Traditional Pressure Reducing Valves play vital specialized roles. The mechanical function minimizes the possibility of failure in extreme environments. They are able to monitor themselves without the use of a control signal, all they require is a pilot with sensing line.



Nicholson is the originator of the bellows actuated thermostatic steam trap and our universal mount design brings easy maintenance, simple installation, and improved energy savings to your important steam trap requirements.

WHILE TRADITIONAL STEAM VALVE SOLUTIONS REMAIN IN USE AT MANY MAJOR UNIVERSITIES, ESPECIALLY IN TUNNEL SYSTEMS, THE EFFICIENCIES OF BUILDING AUTOMATION SYSTEMS CALL FOR A MODERN CONTROL VALVE SYSTEM.

PAST, PRESENT, AND FUTURE, CIRCOR INDUSTRIAL VALVES HAS CAMPUSES COVERED

The staying power of the standard regulating valve setup on district heating and steam distribution is undeniable. For generations, reliable pressure regulator, control valves, and steam traps models from brands Spence Engineering, Leslie Controls, and Nicholson Steam Traps have been workhorse components in all types of facilities. Now, new technology has surfaced offering engineers a second option. It does not fix what is not broken – the job remains the same – but it marries information age technology with industrial dependability. The new two-stage Pressure Reducing Valve with RTK Emergency Closing Unit gives the valves the ability to “talk” to engineers and facility managers, making control and maintenance more efficient than ever.

NEW ELECTRONIC SOLUTION TALKS TO BUILDING AUTOMATION SYSTEM

The CIRCOR RTK PRV with Emergency Closing Unit is intended for use in conjunction with a normally closed RTK control valve and is ideal for applications in district heating systems, main steam distribution, as well as auxiliary equipment like heat exchangers and coils. The major difference between the standard pressure control solution and the RTK: the RTK is electrically actuated and can be remotely monitored and controlled.

In many new buildings, Building Automation Systems (BAS) provide maintenance engineers, and facility managers control from a centralized location over functions throughout a building.

Traditional steam regulation capabilities remain offline from this powerful tool. The RTK PRV with Emergency Closing Unit comes equipped with an electric actuator enabling remote monitoring which can control system pressure, temperature, and other conditions. It can be tied into the BAS (Building Automation System) for performance, monitoring, and benchmarking. “The zinger really is to be able to talk to the system, know there’s a problem, and be able to benchmark that the system is working properly,” says Kevin Rasmussen, President of KEI Steam Solutions, Inc.

“With BASs, the campuses can remotely monitor when they have a pressure upset in the systems,” says Rasmussen. He adds that when an upset occurs, the RTK offers a unique safety shutoff feature and can be used in lieu of a safety relief valve, if configured per ASME B-31.1 Power Piping Code. This eliminates the typical maintenance demands that result from steam shut-off in an over-pressure situation. Other setups require either two pressure reducing valves in series, with the first valve set to shut off against the full line pressure in case an upset occurred, or a safety relief valve – which is very costly to pipe in. Typically, when a safety relief valve is relieved, it requires manual inspection and reset. Often, facility maintenance engineers must then repair the valve. The RTK PRV with Emergency Closing Unit spares the time and cost of this extra manual labor. This safety shutoff feature is “the only one that I know of in existence,” he says, and adds that the state-of-the-art unit offers an important capability for campuses.

RTK BRINGS EFFICIENCY TO A BIG 10 CAMPUS

Universities must manage extensive real estate portfolios and require steam solutions on a significant scale. Especially in colder climates, inadequate heating or steam distribution can negatively affect facilities and the people and resources they house. One large Big Ten university in the Midwest recently opted for a new approach. It installed the new RTK Solution across a campus of around 400 buildings spread out over miles of distribution piping.

The new technology takes system monitoring to a new level. From a single centralized location, technicians pinpoint failures within seconds at buildings miles away. This presents a critical advantage which improves safety, increases efficiency, and saves money.

Traditional steam management systems can be inspection-intensive and rely on the diligence of a staff tasked with checking not just valves but all the components of steam management systems, and most often tasked with performing these checks on more than one building. Across 400 buildings and over many years, the cost of human error can mount. When reliant on manual checks, valve failures can elude even the most skilled, well-staffed, and attentive teams. In an emergent situation such as a blizzard that disables effective movement between buildings, facilities personnel may not be able to monitor the system in person. Often, by the time a valve leak is spotted or steam is heard blowing into the atmosphere, the damage is done. “The standard old designs require transmitters, or they wait until they have a failure somewhere and they figure it out after having weeks of lost energy and site damage occur before someone stumbles upon it,” warns Rasmussen.

The RTK’s electrical integration into a campus-wide system gives engineers a powerful tool to remotely identify problems and quickly resolve failures. Whether in normal or abnormal circumstances, equipping technicians with real-time information that allows for quick and effective triage can increase the speed of maintenance and limit the expensive negative consequences of delayed maintenance. In case of power failure, the RTK Emergency Closing Unit will close itself.

Another feature of campus-wide integration is that the RTK directly addresses system efficiency. The RTK Solution makes it easy to monitor building loads and save on consumption rates by tracking trends. Information from the RTK PRV with Emergency Closing Unit not only creates savings right away, but helps build savings into future development. Failing to right-size a steam management system can prove an expensive mistake. Regardless of smart operation later, a system built with hardware that bakes in inefficiency silently draws from an institution’s energy consumption and financial goals. The big challenge I think engineers have today is that they oversize all the equipment based on maximum btu requirements for the buildings,” says Kevin Rasmussen, President of KEI Steam Solutions, Inc. The electrically-actuated two-stage Pressure Reducing Valve with RTK Emergency Closing Unit provides actionable data to engineers to help avoid this pitfall. “They will be able to make better decisions for future installations and have a better understanding of what the true demand needs are. It will save them money, and reduce the overall mechanical footprint.”

Benefits to the Big 10 university do not stop there. The controllability

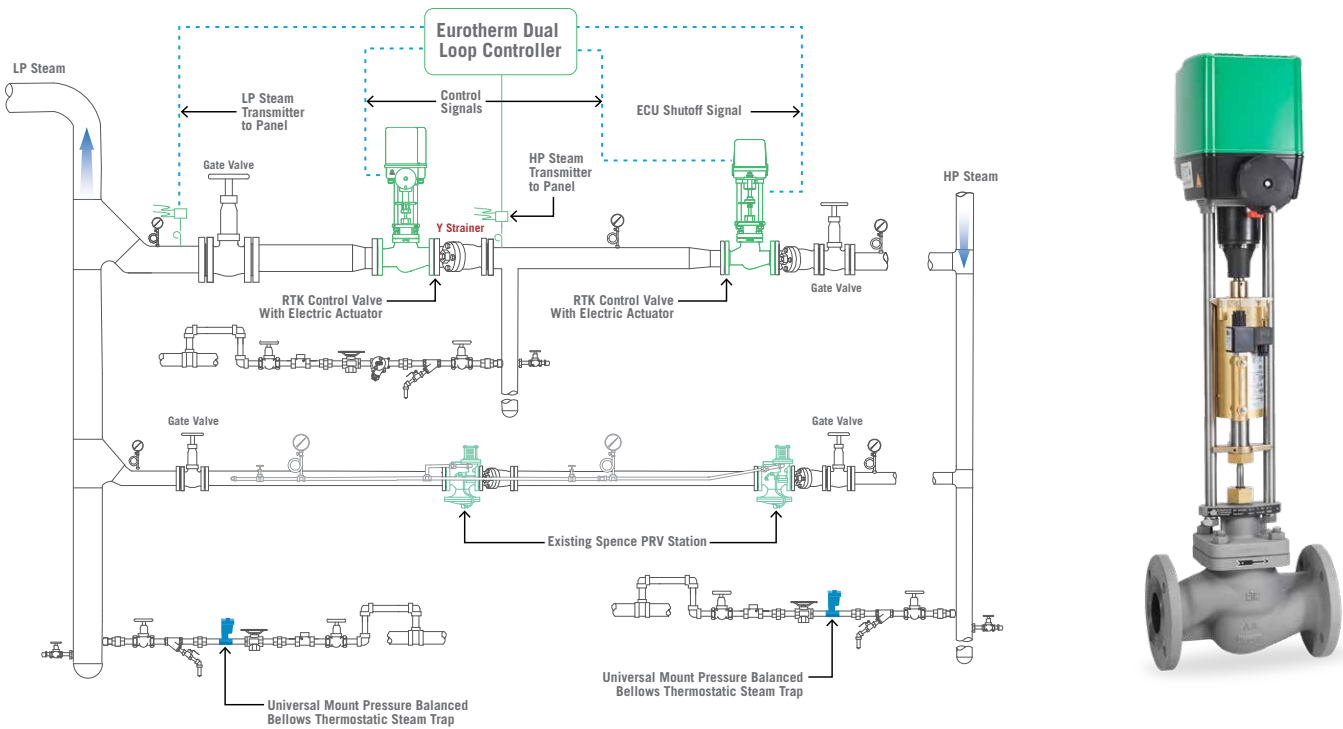
on the Big 10 university's new electric systems is taking high pressure 175 lbs. reducing 10 PSIG and holding ± 1 PSIG. The new system allows for large varying load demands through one station versus multiple parallel stations and enables excellent rangeability, and turndown.

Because control valves call for fewer pipe diameters before and after the valve than pressure reducing valves, the Big 10 university saved cost by using smaller diameters. The use of smaller diameters also results in a smaller installation footprint, which aids with campus solutions that reclaim valuable real estate.

Rasmussen, "on new installations they are using the new electronic technology to talk to certain campus areas that they have updated to the new electrical design." Rasmussen adds that Spence Engineering and Leslie Controls steel pressure regulators are also well suited for superheated steam applications.

Leslie Controls valves have exceptionally high levels of turndown, and Spence Engineering pilot operated valves remain the industry standard for tough jobs. Nicholson steam traps are also highly dependable and effective for condensate removal. These valves do not offer the next-level efficiencies of the RTK, but the traditional mechanical parts minimize

RTK PRESSURE REDUCING STATION WITH RTK ECU SAFETY SHUTOFF



Whether sticking to tradition or embracing a connected future, CIRCOR control valves and regulators offer efficiency and dependability. This diagram shows the coexistence of both solutions.

TRADITIONAL VALVES PLAY VITAL SPECIALIZED ROLES

The RTK PRV with Emergency Closing Unit answers long-time steam management inefficiencies with smart and reliable technology, but it is not the perfect solution to every challenge. In the same way a new boat might use state-of-the-art computer navigation but still pack a trusty low-tech compass, some steam management tasks call for unquestionable reliability.

The tunnel is one example of a special use case. Piping steam through long underground enclosures can create conditions that will constantly challenge any electrical installation: extreme and continuous heat with pervasive dampness. In these circumstances the question changes from whether the new RTK could endure to what solution provides the greatest dependability.

The Big 10 university asked this question. Their answer: Leslie Controls, Spence Engineering, and Nicholson, regulators, and steam traps. "On their standard tunnel distributions lines, they are still using their self-contained pilot-operated pressure reducing valves," says

the possibility of failure in extreme environments. They do not require any controllers and are able to be self-contained in operation, and do not require a control system for operation.

OLD OR NEW, SYSTEMS TRUST CIRCOR

Spence Engineering and Leslie Controls valves and regulators continue to control steam in a majority of the campus applications throughout the United States. Some maintenance engineers and managers appreciate the need for a few replacement parts or opt for the continuity of the traditional pressure releasing valves, and CIRCOR supplies them with a high-quality, reliable product. Other engineers embrace new technology and overhaul the systems they care for, so they can "talk and monitor" with valves miles away and find new savings, and CIRCOR reliability and innovation serves them with the new RTK PRV with Emergency Closing Unit. Whether for a sprawling Midwestern campus or an older campus in the Northeast, whether sticking to tradition or embracing a connected future, CIRCOR control valves and regulators offer efficiency and dependability throughout.



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