Electronic pressure-independent valve optimises HVAC system at leisure facility

EPIV – the energy-efficient and sustainable solution for 'Happyland'

'Happyland' in Klosterneuburg (Austria) offers a huge range of leisure activities for all ages including an indoor wellness pool, a large outdoor sports pool, various playing fields and a large sauna area. In 2013 the operator decided to undertake major renovation, extension and modification work. State-of-the-art technical systems were used, for example to renovate the heating distribution and complex ventilation system. Particular importance was attached to the perfect control technology. The EPIV – one of Belimo's innovative products – more than lived up to its role as a problem-solver in this project.

Type of building	Leisure facility
Project	Renovation
Trade	HVAC
Products	45 electronic pressure-independent characterised control valves (EPIV)
Commissioning	September 2014

Initial situation

Renovation projects don't always get off to a smooth start. Once the current situation has been evaluated and the system documentation put together, work to configure the individual components normally gets underway. Just like the pipework, the control valve also has to be sized. Such lengthy k_{VS} calculations often involve system parameters which are hard to gauge, such as valve authority. An additional challenge in planning this project was that all renovation work had to be undertaken during ongoing operation in order to prevent loss of revenue.

Project requirements

- Renovation during ongoing operation
- Good suitability for everyday use
- Simple handling
- Sustainable, optimum system operation

Belimo solution

Belimo attaches great importance to providing planners with extensive support and working closely with engineering companies. Helmut Doblhofer from the technical office GBT Planung GmbH was quickly convinced of the benefits of the new electronic pressure-independent valve solutions (EPIV). He recognised the benefits of the EPIV, such as reduced planning work and simple valve design, because he had already planned the function principle in zone control for air-handling systems (VAV). The dynamic hydraulic balancing and the large dynamic range of the EPIV make the valve authority across the entire control equals 1. Once the order had been placed with Bacon Gebäudetechnik GmbH (Linz branch), the costs of a conventional solution (fitting a line-type regulator and manual hydraulic balancing) were to be compared with those of Belimo's EPIV solution. This showed that the EPIV solution is noticeably cheaper and that the system can be operated with much more energy efficiency.

Customer benefits

- Greatly minimised efforts for hydraulic balancing
- Easy to integrate in measuring, control and regulation technology
- Cost-efficient than conventional systems
- Feedback signal provided for amount of water measured
- Constant, dynamic hydraulic balancing of entire system
- 5-year product warranty

A total of 45 EPIV were fitted on eight distributors during ongoing operation. This wasn't a problem for Belimo's characterised control valve, which dynamically regulates hydraulic balancing.

Customer satisfaction

Thomas Pfeiffer (overall project manager at Bacon Gebäudetechnik GmbH) was quick to opt for the EPIV thanks to its many benefits: "This solution was able to fast and smoothly complete the challenge of modifying and starting up each of the eight distributors during operation." Pfeiffer was also very pleasantly surprised about practical suitablity, how easy it is to handle and the commercial advantages: "The EPIV solution is based on state-of-the-art technology. It reduces manufacturing costs, and the five-year product warranty provides good investment protection. The system also ensures sustainable and optimum system operation for years to come."

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