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Case story | AB-QM

Hospital **gains energy savings** and **indoor comfort** by **automatic balancing** of the cooling system

The super modern MERSIN University Hospital in Turkey enjoys all the benefits of automatic balancing of the district cooling system. Saved costs, reduced carbon footprint, and improved indoor comfort convinced contractor, specifier, and the hospital management to go for Pressure Independent Balancing and Control Valves in the advanced cooling system.

>400,000 euro saved
on project investment.

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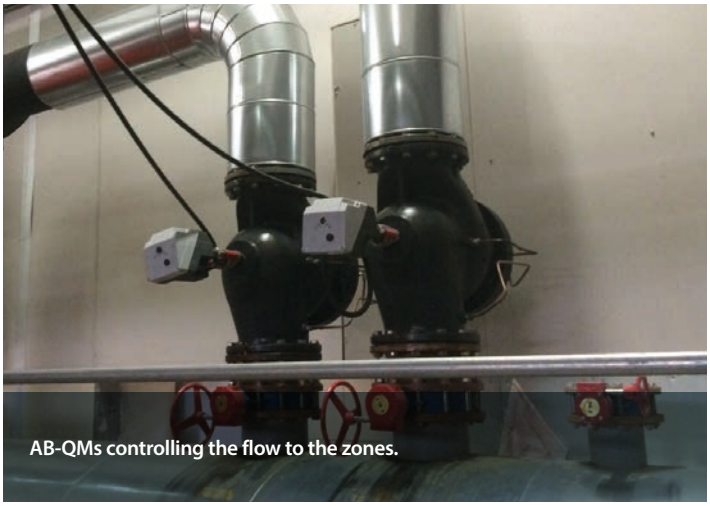
Turkey's population exceeds 75 million and is still growing. The MERSIN Hospital in the province Mersin is part of the Turkish government's health transformation program initiated in 2003. The hospital received its first patients in 2014 and represents 170,000 m^2 of modern hospital facilities with more than 1,000 beds.

Choosing the optimum cooling solution

Originally, the MERSIN hospital was designed with a traditional District Cooling System, applying constant flow and hydraulic coupling. This type of system requires major investments in a large number of pumps and manual balancing valves. Add to this, that the solution carries high installation and commissioning costs and that the technical installations take up valuable space.

After the initial dialogue, Danfoss proposed an alternative solution, applying a variable flow system with Pressure Independent Balancing and Control Valves (PIBCV). After careful evaluation of the automatic balancing solution, the consulting engineers in charge of the system design and the construction company that owns the building were convinced to go for the variable flow system, first and foremost due to the following advantages:

- Significant reductions in initial investment costs by eliminating zone pumps and the number of valves
- Significant reduction in installation and commissioning costs by less complexity and by using automatic balancing valves that require no manual balancing
- Reliable and precise flow control and perfect cooling at all times
- Easy integration into the BMS system with fewer control points
- Freed-up space leaving room for the vital functions of the hospital



AB-QMs controlling the flow to the zones.

AB-QMs controlling the flows into the chillers.

Huge cost savings in construction phase and daily operation

Project Manager Ibrahim Geyikçi from the construction company Uransan Holding expressed his great satisfaction with the solution.

By using Danfoss Pressure Independent Balancing and Control Valves, we cut down on installation costs and achieved a very precise flow control that benefits patients and staff. I am very happy with the result.

Ibrahim Geyikçi, Project Manager from the construction company Uransan Holding

The hospital also noted several advantages in terms of energy and cost savings in the daily operation of the cooling system. Among others, they have been able to lower the energy consumption of the pumps, the chiller efficiency has been increased, and the heat loss on the return lines has been minimized. Furthermore, patients and staff express their satisfaction with the pleasant indoor climate that facilitates recovery and general well-being.

Facts about the system:

34 PIBCV: AB-QM DN 250
34 actuators: AME 85QM

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