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Automatic Thermal Balancing System -

Multifunctional Thermostatic Circulation Valve

Energy saving can be achieved not only by enhancing the energy efficiency of the system but also through energy conservation through indirect devices. Hot water supply accounts for more than 18% of the electricity consumption within residential buildings. Hot water supply in buildings are often offered with circulation so that the hot water waiting time is shortened, hot water wastage is reduced, and a fairer energy cost allocation may be achieved.

Hot water circulation systems are often equipped with valve to control the flow within the open loop system. With manual valves, the system response is static, hence unable to adjust the flow according to the immediate demand, causing imbalance within the system.

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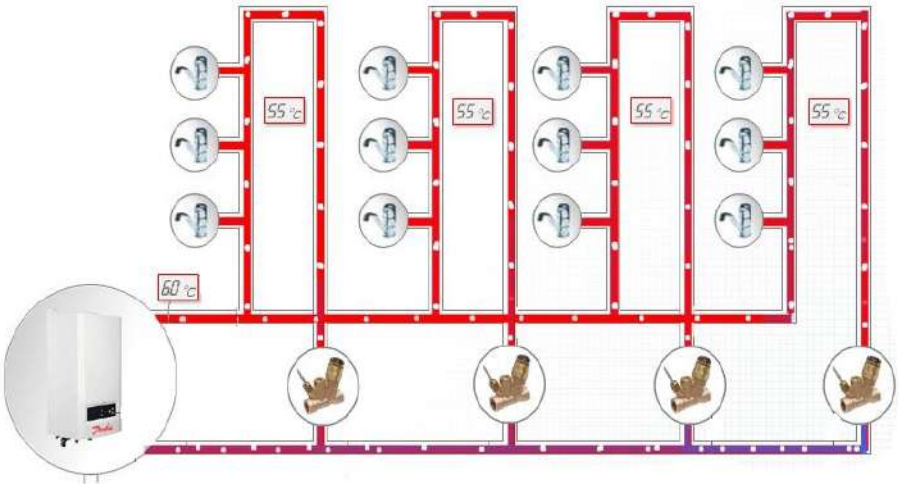
Thermal balance may be achieved through Danfoss' Multifunctional Thermostatic Circulation Valve. The valve automatically adjust adapts to the dynamic input of the water consumption by controlling the circulation flow. The valves use temperature as a signal in the feedback loop controlling the opening of the valve. Hence the circulation flow is main tained at the minimum, minimizing energy loss and pump losses during operation. Since the unused water is circulated through the system, unused water is circulated back to the hot water tank, less water wasted. In the meantime, due to the hot water circulation system, the risk of legionella infection is reduced.



The Multifunctional Thermostatic Circulation Valve can be integrated with electronic thermal disinfection for system optimization and parameters monitoring. The integrated system consists of advanced control, such that optimization and monitoring of disinfection process may be achieved. In addition, it also contributes to energy and time saving in terms of shorter disinfection time for the system, lower pump head and reduced risk of sludge and corrosion of zinc. The data may also be remotely accessed through TPC/IP web server and (WIFI) according to customers set-up.

What's Next

Thermal Energy Storage Tank

Thermal Balancing System

Featured photo credit to Danfoss.