

ABSTRACT

The present invention comprises a controller for controlling at least a booster pump, and receiving signals from at least two pressure sensors. The first pressure sensor is coupled to a water pipe downstream from the booster pump and a one-way valve for detecting and setting a high pressure threshold P_H and sending appropriate feedback signals to the controller which in turn varies the speed of the booster pump. P_H represents near zero or no demand of water. P_H also serves as a reference for the present invention to confirm automatically the actual demand for water in the pipeline without using flow sensors. A second pressure sensor is also coupled to the water pipe downstream from the booster pump and a one-way valve for detecting and setting a low pressure threshold P_L and for transmitting a feedback signal to the controller which in turn operates the booster pump to supply water to the first and subsequent user with the minimum required water pressure. P_L represents a high level of demand for water. P_H and P_L offers controller a range of pressure which is larger than that of the sensitivity of the pressure sensors. By forcing the booster pump to run at a pressure below the threshold P_H , the present invention confirms automatically the actual demand for water in the pipeline even if the demand is not sensitive enough for the pressure sensors to detect. The controller then varies the speed of the booster pump to compensate for the difference between the actual demand for water and the output of the booster pump without using any flow sensor.

