

PRESSURE MANAGEMENT

AREA OF EXPERTISE

Excess pressure within a distribution system can give rise to unnecessary expense through both increased leakage and additional maintenance costs from higher pipe burst frequencies. In the right circumstances, the application of pressure control can quickly reduce costs in these areas and, perhaps more importantly, assist in maintaining the reductions. Recent advances in pressure control techniques mean that reduction is now viable in many more situations than was previously possible.

JOAT offers three types of pressure control: fixed outlet control, time-based modulation and flow-based modulation. Each type of control has merits and can be selected in various forms depending on the cost-to-benefit analysis for each application. This analysis is typically done using field data and proven statistical models. All three methods may be supplied with either local or remote control/data collection functionality.

A brief description of the methods is outlined below:

Fixed Outlet Control

Fixed outlet control is the traditional method of control. This method is still very useful and cost effective for areas with low headlosses and demands which do not vary greatly due to seasonal changes, and areas with uniform supply characteristics.



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Time-Based Modulation

Time-based modulation can be effected by using a controller with an internal timer. Control is obtained in time-bands in accordance with demand profiles. This methodology is very effective for areas with stable demand profiles and head losses, and is usually used where cost is an issue, but advanced pressure control is desired. Time-based modulation controllers can be supplied with or without data loggers and/or remote links

Flow-Based Modulation

Flow-based modulation is the best type of control for areas with changing conditions, headloss, fire flow requirements and the need for advanced control. This type of control is effected by controlling outlet pressure in relation to demand by connecting the controller to a metered signal output. This type of controller is normally supplied with a local data logger and optional remote communications. Installation costs are higher; however, additional savings and guaranteed fire flows due to more intelligent control usually make this type of control more desirable.

There are many aspects to pressure control and JOAT offers a comprehensive service, which can tackle individual needs or integrate several into a single project.

The main elements of the service include:

- Pressure control policy development
- Pressure reducing valve (PRV) operation audits
- Equipment evaluation trials
- Equipment selection/procurement/commissioning
- Contract management of installations
- Regular PRV optimization programmes
- Routine PRV maintenance programmes

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