



Case Study

Monterrey Water and Drainage Services, Mexico

HyMod saves water in semi-desert region of Monterrey

Background

Throughout its history, Monterrey has struggled with the challenges of being located in a semi-desert area, with cyclical periods of prolonged drought, contrasted with periods of heavy rainfall.

In April 1956, Monterrey Water and Drainage Services (SADM) was established to provide and manage municipal water and drainage services to the inhabitants of the city of Monterrey and surrounding municipalities.

Challenges Water losses caused by leakages and pipe breaks

Due to limited supply sources into the municipality of Monterrey following the cancelation of a water-supply reinforcement project, the reduction of water losses due to leakages and pipe breaks became critical. SADM decided to investigate the effectiveness of using high-end pressure-management solutions. Given the scarcity of power, the new solution would ideally not require electronics. It would also use equipment as similar as possible to the standard Pressure-Reducing Valve (PRV), which would be completely automatic and autonomous, independent of periodic service actions such as battery-replacement, and require no additional hardware or software.

Solution Reducing pressure, modulating flow

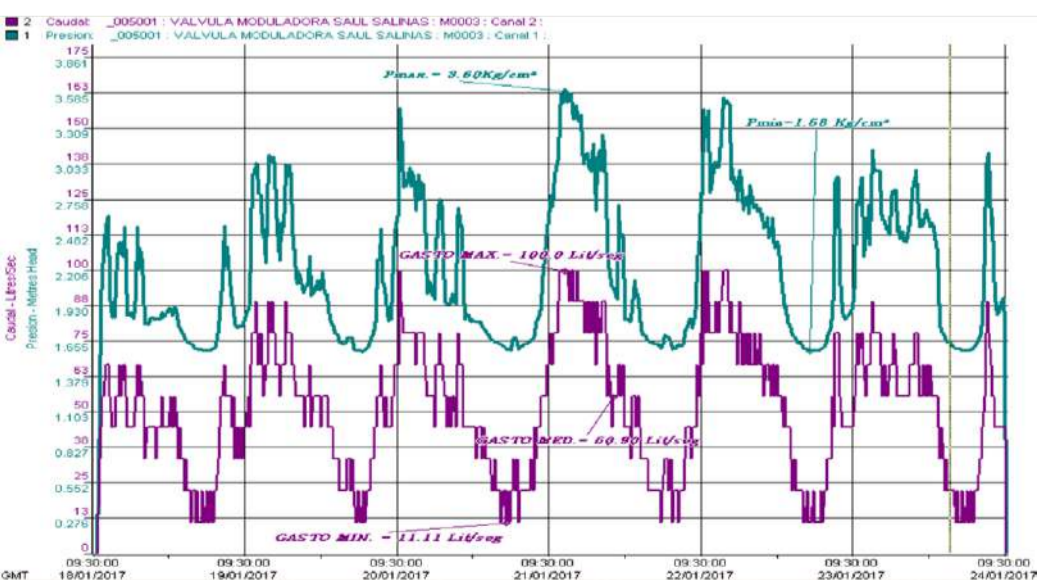
The DOROT S300 PRM(HyMod 12" flow-modulated pressure-reducing valves, were installed in three zones. Reducing pressure in a stable manner with downstream-pressure set-value modulation following flow changes, the DOROT S300 PRM(HyMod) system maintains a minimal required target-point pressure, at a stable and fixed set-value, regardless of flow variation. As a hydro-mechanical solution it also meets the requirement for a non-electronic solution.

The valves were assembled locally, installed and commissioned by Aquestia's Mexican subsidiary and operated by SADM.



Results 25% water saving

The results in the graph below are from one of the DOROT S300 PRM(HyMod) systems, installed in an underground valve chamber in the main street of Raul Salinas Avenue. The valve was set to regulate to a minimum pressure of 1.5 bar at minimum flow, and a maximum pressure (at peak demand flow) of 3.2 bar. The demand flow changes from 11 to 100 lit/second. The valve has achieved input volume savings of 25%.



DOROT S300 PRM(HyMod) 12" performance over a week of operation:
Purple line: logged flow-rate through the control valve
Green line: regulated pressure, downstream of the control-valve.
The pressure is modulated to follow the demand-flow profile