

SURGE PROTECTION

APPLICATION SHEET

APPLICATION OVERVIEW

When pressure surges occur they can damage downstream piping and instrumentation. Surges are created by quick closings of emergency shutdown devices, rapid closure of valves including non-return valves, and starting or stopping of a pump. Onshore and offshore pipelines, storage terminals, and marine loading and unloading are applications where surge protection is required. Many factors can contribute to surge pressures that can be hazardous to personnel and the environment. Design factors when selecting surge relief valves include valve response time, the valve flow characteristic control curve, and valve flow coefficient.



KATES SOLUTION

Kates Flow Controllers not only control flow rates at the desired dialed-in flow setting but have the ability to alleviate upstream pressure surges from continuing downstream of the unit. Inherent in the Kates design is the control of flow regardless of pressure surges up or downstream. The Kates Flow Controller will only deliver the minimal pressure downstream required to accomplish its set flow rate. Kates is a fast-acting and linear flow device which are two preferred characteristics of surge control devices. While Kates does not replace surge relief valves designed to decrease line pressure excesses, Kates does provide an effective solution to minimize upstream surges from negatively impacting downstream piping and instrumentation while accurately controlling flow. Kates is a totally mechanical flow control device that requires a minimum 10psi differential across the unit to operate accurately. The unit is designed to operate with downstream line pressures within 10 psi of inlet pressure to full pressure drop and maintain set flow. This range of differential pressure while maintaining constant flow minimizes the risk of pressure surges downstream.

