



# Linear flow control and emergency shut-off

*Photograph shows SIPOS 5 actuators controlling Val-Matic rubber seated ball valves at the North Water Reclamation Facility, Erie, Colorado, US. The actuators provide linear flow control and emergency shut-off capability.*



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## Application

### Non-potable water pumping

The non-potable water pumping station located in Erie, Colorado distributes treated water from a storage reservoir to the town's irrigation system and to Boulder Creek in the Rocky Mountains.

## Design Challenge

### Linear flow control with power failure protection

The valve / actuator system must manage water surges during pump start-up and shut-down, provide linear water flow control during normal operation and protect the pump in the event of power failure.

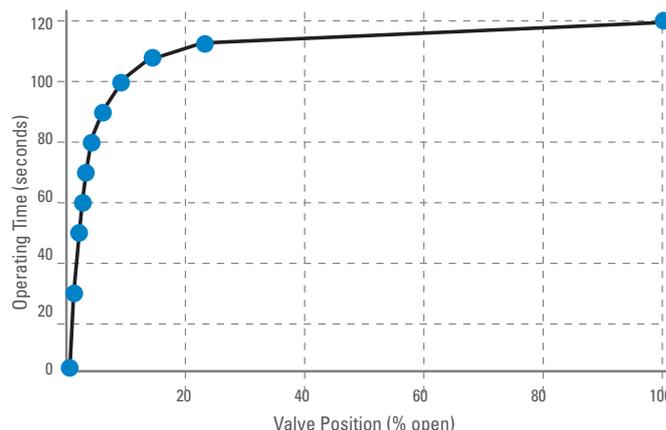
## Solution

### SIPOS 5 variable speed control with time / valve position control

Valve operation and avoidance of water hammer has been achieved using a SIPOS 5 variable speed control actuator. The actuator has been programmed to open / close in a pre-determined time interval. Linear flow control has been achieved using the actuator's time set capability allowing 10 different set times corresponding to 10 valve open positions. In addition, the provision of an electrical UPS allows the valve to be closed to protect the pump in the event of power failure.

## Technical Data

### Pump control valve operating time characteristics



## Function Profile

The SIPOS 5 actuator has the unique capability to control valve position based on preset times. Up to ten time set points, with corresponding valve positions, can be programmed. The speed of valve opening or closing is then controlled ensuring that the desired set position is achieved at the correct time.

This advanced flexibility can produce linearization of valve characteristics, allowing full port valve selection and / or significantly reduced water hammer when closing valves. In addition, the use of advanced electrical design incorporating inverter technology allows the use of simple single phase UPS supplies to control the valve in event of power failure.

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