Water hammer prevention in Colorado

Colorado ECCV Southern Booster Pump Station fitted with ball valves operated by SIPOS 5 actuators for safe high volume pump control.

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Design Challenge

Avoiding water hammer

The ECCV Southern Booster Pump Station in Colorado is fitted with high volume pumps and uses pump check valves for flow control. To avoid water hammer and potentially serious system damage the application requires a linear flow characteristic. The design challenge is obtaining linear flow from a ball valve which typically exhibits non-linear flow characteristics as it is closed/opened.

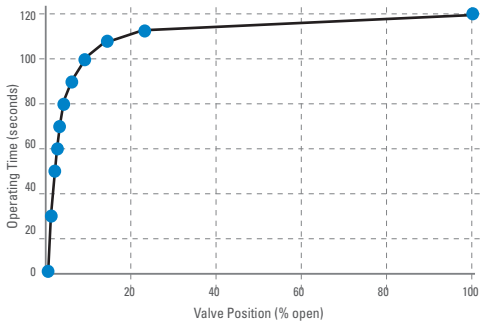
Solution

SIPOS 5 with variable speed actuation

The SIPOS 5 actuator, with its variable speed capability, can be set to achieve different stroke positions over different time intervals. In this way the ball valve can be driven closed/open at different speeds to provide more linear fluid flow change. In addition, in the event of a power failure, the actuator can be set to close the valve and drain the system at a different 'emergency' curve.

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.

Location

Colorado USA

CONTACT
SIPOS Aktorik GmbH
Im Erlet 2
D-90518 Altdorf
Germany

tel: +49 (0) 9187 9227 - 0
email: info@sipos.de

www.sipos.de

SIP-V/VA 26.16.006 GB 02.13