Back-up Safety Feature

Integrated failsafe mechanism

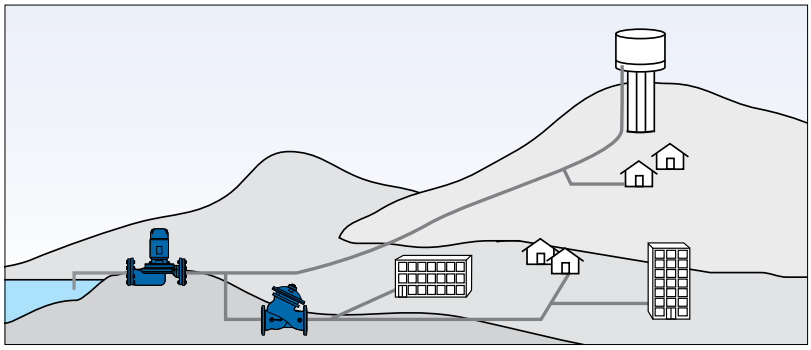
Feature Code: TC

A failsafe mechanism designed for critical or sensitive water systems where continuous operation of control valves is crucial. This double safety feature is based on a third control chamber that is integrated into the valve's regular actuator. The third Control Chamber acts as a hot-backup mechanism for ensuring continuous operation of the control system in the event of malfunction in the valve's main control loop or diaphragm.
During regular operation the failsafe mechanism is on standby, monitoring the main control loop. Once the operation of the valve deviates from its designated control parameters, the third chamber control loop immediately kicks-in replacing the operation of the faulty one. An optional dry contact switch can be added for triggering an alarm circuit whenever the failsafe mechanism is activated.

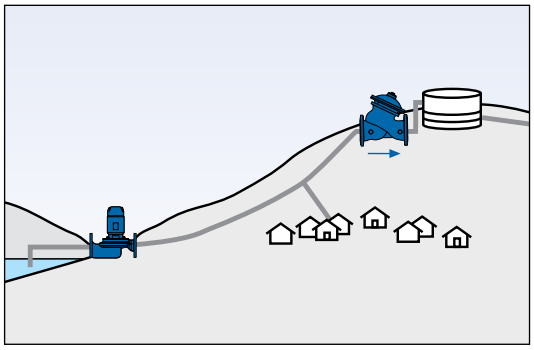
Typical Applications

The additional third Failsafe Control Chamber can be added to any BERMAD 700 series valve installed at a mission critical water control system in various applications such as:

- Pressure reduction (drawing 1)
- Level control (drawing 2)
- Pressure management
- Flow control
- On-Off control



Typical installation of pressure reducing valve with back-up safety feature

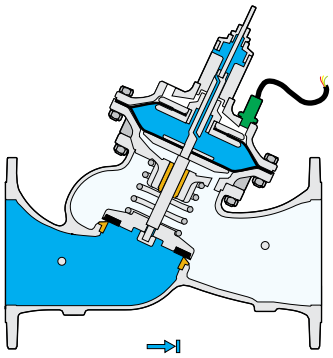


Typical installation of level control valve with back-up safety feature

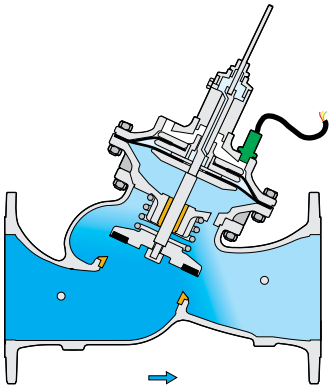
Features & Benefits

- Integral triple chamber design with two chambers on regular operation and one on standby, ensuring continuous operation of the control valve in case of main control loop or diaphragm malfunction.
- Dual purpose failsafe mechanism for duplicating the primary control or shutting the valve off in case of emergency.
- Optional dry contact switch for triggering alarm circuits when the failsafe mechanism is activated.
- Simple and easy to install design, allowing on-site retrofitting of any installed 700 series valve by adding the failsafe mechanism without the need to remove the valve from the water line.
- Durable design suitable for highly intensive operation.
- High quality construction materials ensure reliable, resilient and long lasting operation.
- Advanced hydraulic design ensures drip tight sealing.
- Straightforward balanced design including an actuator that can be easily disassembled from the valve body as a separate integral unit for minimal downtime and easy on-site inline maintenance.
- Removable seat assembly offers easy on-site inline maintenance.

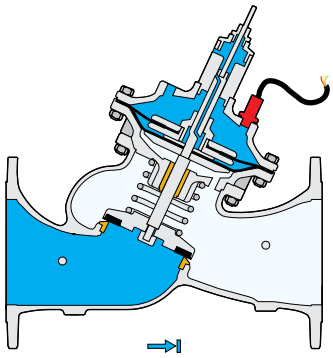
Operation



Closed



Open



Back-up Closed

Closed Position	Open Position	Fail-safe Operation
Line pressure applied to the middle control chamber of the valve creates a superior force that moves the valve to the closed position and provides drip tight sealing.	Discharging the pressure from the middle control chamber to the atmosphere or to other lower pressure zone, causes the line pressure acting on the seal disc to move the valve to the open position	Malfunction in the regular control or the diaphragm activates the failsafe hot-backup control. Line pressure applied to the upper control chamber of the valve enables the valve operation. An optional limit switch signals the SCADA system when the backup position is on.

* For full technical data, see Engineering section or consult BERMAD

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