

Beyond Safety: Crosby™ Bellows Leak Detection



CROSBY™ The Crosby J-Series Bellows Leak Detection solution ensures balanced operation, reduces fugitive emissions and provides instant notification of a bellows failure.

The challenge of bellows failures

Data analysis from 30,000 PRV service records across different industries and valve brands shows a bellows failure rate between 2 to 6%.

Ruptured bellows will cause fugitive emissions and may prevent valve operation at the designed set pressure.

Bellows failures are challenging to detect and often remain unnoticed for years until removal of the valve for periodic service.

Reinventing pressure relief valves

Emerson's Bellows Leak Detection solution is a safer and more efficient method to detect bellows ruptures and emissions.

It ensures balanced operation with a backup piston and reduces emissions by over 90% in the event of a bellows rupture.

Furthermore, it provides instant timestamped notification of bellows rupture and emissions volumetric calculation in real-time.

Rosemount™ Pressure Transmitter

- Bellows rupture instant notification
- Emissions real-time quantification



Backup Piston

- Balanced operation after bellows failure
- Bonnet vent leakage reduction



EMERSON™

Crosby™ Bellows Leak Detection Technology

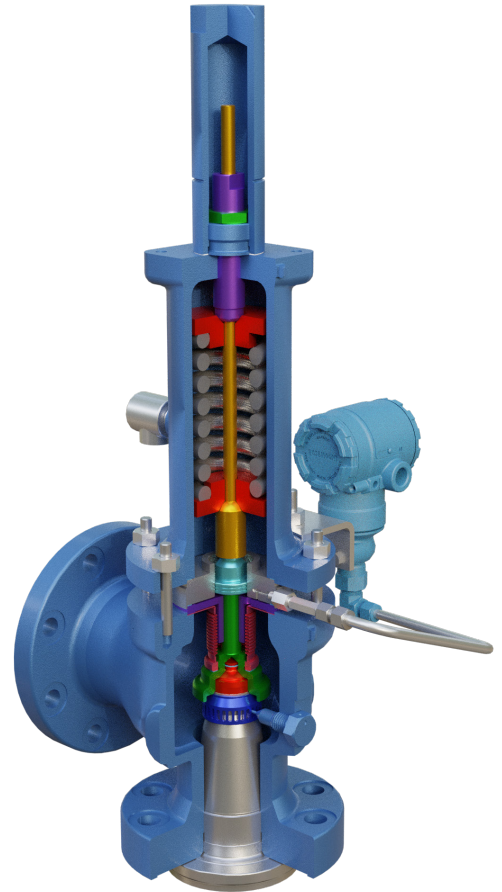
How it works

The system has two components: a backup piston that guarantees balanced operation if the bellows ruptures and a Rosemount™ pressure transmitter that monitors the pressure chamber between the piston and the bellows. Any minuscule breach of containment from the bellows will create build-up pressure in the chamber.

Monitoring this pressure is a very effective and accurate way to detect bellows leakage. Additionally, by knowing the instant pressure, it is possible to calculate the volumetric emissions going to the atmosphere through the bonnet vent.

The Crosby Bellows Leak Detection difference

- Instant notification of bellows rupture allows effective maintenance protocol
- Detection of small ruptures, from 0.0009 in² (D orifice)
- Event logging enables cross reference with process variables for root cause failure analysis
- Balanced operation after bellows rupture enhances safety
- Emissions volumetric calculation in real-time for risk assessment and decision making
- Emissions through the bonnet vent reduced by over 90%
- Easy integration to plant systems with wireless or wired Rosemount transmitters
- Easily enhance existing Crosby J-Series with Bellows Leak Detection upgrade kits



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