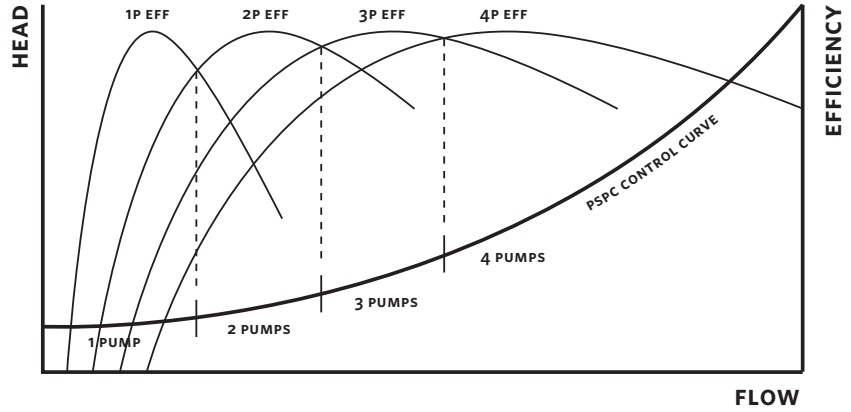


DESIGN ENVELOPE

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Parallel pumping - Efficiencies in concert



Achieving coordinated, parallel operation is a key step in reaching peak efficiency levels in pumping systems that employ multiple units. Digital control technology made available in the last 10 years has made this possible, and the use of variable speed drives to control pumps is now an established practice.

For professionals involved in designing, installing or managing pumping systems, there are opportunities to improve on the original concept of variable speed, operating multiple pumps in parallel. By investing in updated pumping technology, you can now maximize the operating efficiency of your variable flow pumping system.

You can now control up to four vertical in-line pumps operating in parallel with no requirement for external equipment.

Where building owners would previously have faced steep costs related to a retrofit installation of variable speed, the opportunity now exists to retrofit an existing multi-pump installation without the cost and inconvenience of installing and wiring a remote sensor.

As a building owner, you also have the opportunity to address your overall system risk, and minimize installation costs. Recently introduced technology also offers the opportunity to improve and shorten maintenance procedures on parallel pumping systems.

Where true best efficiency control of parallel pumping systems used to require external controls mounted on a wall, you can now control up to four vertical in-line pumps operating in parallel with no requirement for external equipment.

To take advantage of these opportunities for a parallel pumping installation, industry professionals need control solutions that offer:

- Lowest installed cost,
- Advanced control methodology to provide optimal efficiency,
- A proven solution that can be specified with confidence,
- Appropriate redundancy to support parallel configuration,
- A complete integrated package of pump and controller,
- Installation and operating flexibility to accommodate building design and use changes.

Parallel pumping is a common design in HVAC systems. To combine the advantages of variable speed and parallel pumping Armstrong now offers Design Envelope Parallel Sensorless™ pump control. This control technology can be added to any Design Envelope Vertical In-Line or dualARM pump, to provide the benefits of advanced, variable flow, parallel pumping.

The most substantial benefits come from installations employing sensorless, variable speed pumps operating in parallel, using operating efficiency as the key determinant in pump staging. Building owners can save 30% to 40% on energy costs using Parallel Sensorless pumps compared to the industry-standard variable speed installation relying on a remote sensor (see file 9.543 - Tridel Ventus case study).

Beyond substantial energy savings, key benefits of Armstrong Design Envelope Parallel Sensorless control include:

Lowest installed cost.

Improved ROI and faster payback for both new-build and retrofit projects.

Minimized maintenance costs.

Peace of mind and long-term project success.

The Armstrong Design Envelope Parallel Sensorless solution offers advanced features to improve the performance of your multipump system, including:

- True best efficiency staging of multiple vertical in-line pumps.
- Integrated controls employing Parallel Sensorless pump control technology.
- Redundancy at both the mechanical (multi-pump system) and control levels. If the controller is damaged, the sensorless pump control embedded in the integrated drives continues to adjust the speed of operating pumps as needed to serve system demand.
- Advanced control features to optimize pump speed on as many as four Design Envelope pumps, using a single Parallel Sensorless controller.
- Easy transfer of the Parallel Sensorless controller from one pump to another to facilitate maintenance.

The technical and financial benefits of selecting a Parallel Sensorless pumping solution that offers true best efficiency staging, multiple levels of redundancy and advanced control features make the Armstrong Design Envelope parallel sensorless pump control a compelling product solution.

For more information, contact your Armstrong Representative or visit us at:

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