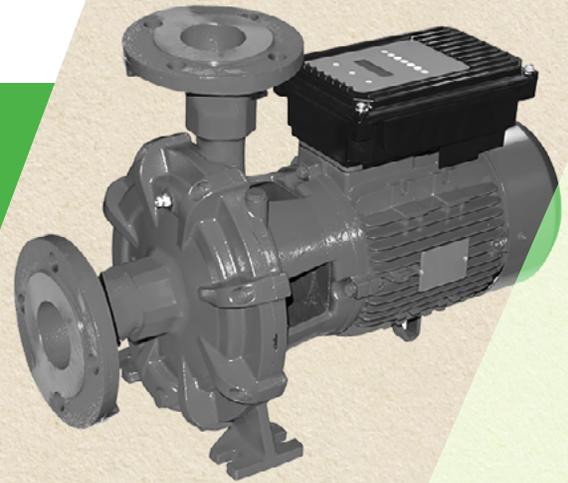


SMART PUMP FACT SHEET

Retrofits: The future of efficient and reliable pump control for your existing system



What makes a smart pump so smart?

Smart pumps—often termed a ‘self-sensing’ or ‘sensor-less’—integrate variable speed controls to optimize operation based on system requirements. They come packaged as a pump, motor, and variable speed drive with built-in control strategies. Manufacturers test and program the controls and use on-board monitoring to determine the pump load. This eliminates the need for downstream sensors, minimizing potential sources of error.

More than just a variable frequency drive

Smart pumps reduce operational pitfalls and enhance efficiency through streamlined control. Performance mapping enables self-optimization. With simple and fast installation, balancing, and commissioning, these pumps reduce parts and labor costs associated with traditional pumps. Moreover, thanks to their packaged nature, fewer tradespeople are required for the commissioning process.

Retrofits are excellent smart pump opportunities

Every design or redesign of a hydronic or booster pump system is an opportunity to take advantage of smart pump benefits.

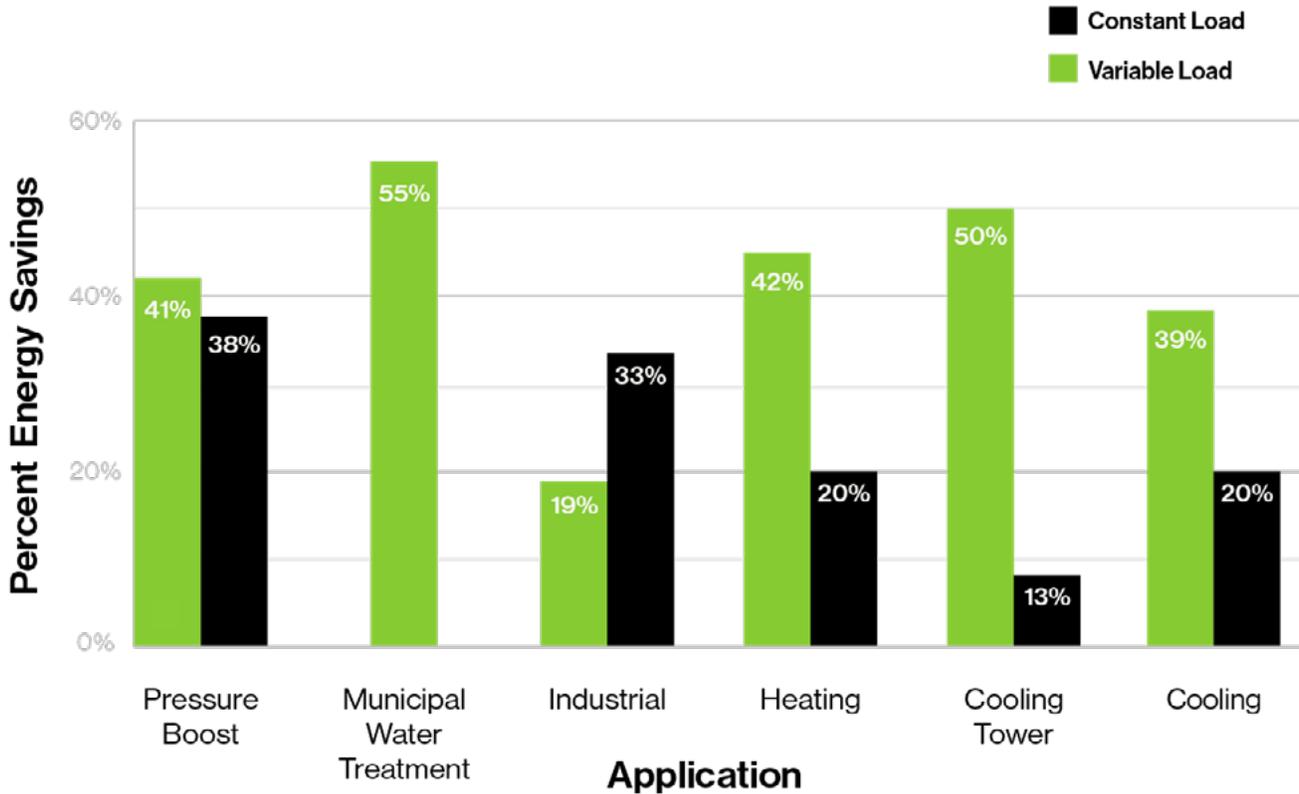
Consider a smart pump retrofit if:

- Your pump does not have variable speed functionality.
- Your pump has a balancing valve that is more than 20% shut.
- You are replacing a variable speed pump and the variable frequency drive that controls it.
- Your pump requires frequent maintenance or makes excessive noise. These are all hallmarks of poor pump operation that a smart pump can address.
- Your pump is oversized. Replacing an oversized pump or pump system with a smart pump can reduce maintenance, decrease noise, and save energy.



Save on constant and variable load

Most pumps are oversized and many are balanced using throttling valves. An analysis by the Northwest Energy Efficiency Alliance (NEEA) of 132 pumps in the Northwest showed that pumps were oversized by an average of 24%. These pumps could save 13% to 38% of electricity use just by slowing the pump down instead of throttling.¹



Availability

Smart pumps have been on the market for several years, and manufacturers routinely add more pump types, sizes, and motor types to their lines.



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¹Source: [neea.org/resources/power-drive-systems-energy-savings-and-non-energy-benefits-in-constant-variable-load-applications](https://www.neea.org/resources/power-drive-systems-energy-savings-and-non-energy-benefits-in-constant-variable-load-applications)

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