



# FOCUS ON EMERGING TECHNOLOGY

## ADVANCED CIRCULATOR PUMPS

### Technology Description

Advanced circulator pumps are energy-efficient substitutes for constant speed Permanent Split Capacitor (PSC) motor pumps. These pumps are typically used on domestic hot water recirculation loops, heating hot water circulation loops, cooling water circulation loops, and/or water loop heat pump circulation. Advanced circulator pumps are Electronically Commutated (EC) motors which have integrated variable speed capability. They reduce energy use by sensing water temperature, pressure and flow, and then adjusting pump speed to achieve parameters established in the chosen control algorithm.

In addition to the savings from variable speed operation, other energy-saving features of advanced circulator pumps include:

- Reduced excessive flow and pressure produced by baseline pump.
- Varied pump flow and pressure based on measured feedback.
- Removed throttling valve pressure drop.
- Greater mechanical pumping efficiency.

### Benefits

1. Typical energy savings are 75% to 90% compared to PSC.
2. Fewer piping elbow failures and reduced piping noise caused by excessive flow.
3. Simple installation minimizes required adjustments to piping.
4. The voltage can be specified to match the existing pump's electrical supply.

### Customer Type

Any building with hot water heating, chilled water cooling, or domestic water recirculation.

### Applications

Hot- and cold-water recirculation loops.

### Market Sectors

Commercial, Industrial, Multifamily, Schools.

### Potential Energy Savings

Energy savings is dependent upon pump size, but many applications deliver 75% to 90% energy savings.

### Potential Payback Range

Three to five years pre-incentive.

### Incentives Available

Incentives are available directly through [participating Trade Allies](#) at the time of purchase.