Smart Pump: Best Practices

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Agenda

• Smart pump incentives
• What makes a pump smart
• Why should we use them
• Optimizing smart pumps
• Avoiding common mistakes
Smart Pump Incentives

Small Pumps < 3 HP
Upstream rebates between $15 - $600

Large Pumps 3 – 30 HP
Structured custom rebate
Pump must meet program requirements
3 – 10HP $400/hp*
15 -30HP $300/hp*

Larger than 30 HP
Full custom contact Efficiency VT

* Requires Prop Pressure or Temp Diff operating mode
What Makes A Pump Smart?

• A pump capable of independent speed control based on hydronic system variables using an on board processor.
  – Includes ECM technology
  – Multiple operating modes

• No external sensors.
  – Saves money and time

• No external control signal.
  – Saves money and time
Why Should We Use Them?

• Future proof simple interface.
  – They can change and adapt with your building.

• Saves Money
  – Avoided cost
  – Electrical paybacks/ incentives

• Energy Benefits
  – When set up correctly there is enormous energy saving potential
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Optimizing: Choose The Correct Mode

- Identify the hydronic system type:
  - Dynamic: A system with valves/pressure change,
    - Variable flow
  - Non-Dynamic: A system without pressure change
    - Constant flow
Optimizing: Choose The Correct Mode

There can be up to 7 modes to chose from.

• Non-Dynamic
  – Use: Constant Curve, Constant Temp*, or Diff Temp*

• Dynamic
  – Use: Proportional Pressure, Constant diff Pressure, or Automatic**

• Don’t Just “Set it and forget it”

*Temperature settings should be reserved for single zone systems.
**Use Caution when selecting Auto for a commercial systems.
Optimizing: Choose The Correct Mode

• **Do not** use fixed orifice balance devices in dynamic systems

2 way valve = Autoflow or PIC
Modulating = PIC

Pump
Avoiding Common Mistakes

Water Quality Air/ Dirt Separation

• The most common fault is a fouled sensor
  – Ferrous debris collects in magnetic pumps
• Solution: Install a coalescing Air/Dirt separator
  – Eliminates particles down to 30 microns.
  – Eliminates both entrained air and micro bubbles.
Air and Dirt Separators

Installation:

• Design for blowdown cleaning. Install a valve with hose connection and cap.
  • Do not install expansion tank or make up water to the bottom port.
  • On a new installation, clean monthly until water runs clear. Then flush every 6-12 months.

Connect expansion tank and water make just upstream of air/dirt unit

Full port ball valve with hose end connection and cap for blowdown
Thank you!

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Avoiding Common Mistakes

Pump Orientation

• All wet rotor circulators need to be mounted with the shaft horizontal to the ground.
  – Some manufacturers require this for warranty.