

Smart pumping your entire system

Here's a giant leap forward for variable speed pumping: the Self-Sensing Series with ProBalance[®]. At the heart is the patent pending SelfSensing ProBalance technology. The VFD's SelfSensing capabilities make fast, accurate do-it-yourself system balancing easy. Reduced balancing contractor costs, no expensive wiring, and no additional sensors required. Apply to ALL your pumping needs: both constant flow chiller/boiler pumps and secondary variable flow pumps!



SKS/SKV Series
(Pump mounted drive)



SFI/SCI Series
(Wall mounted drive)



SFI Series



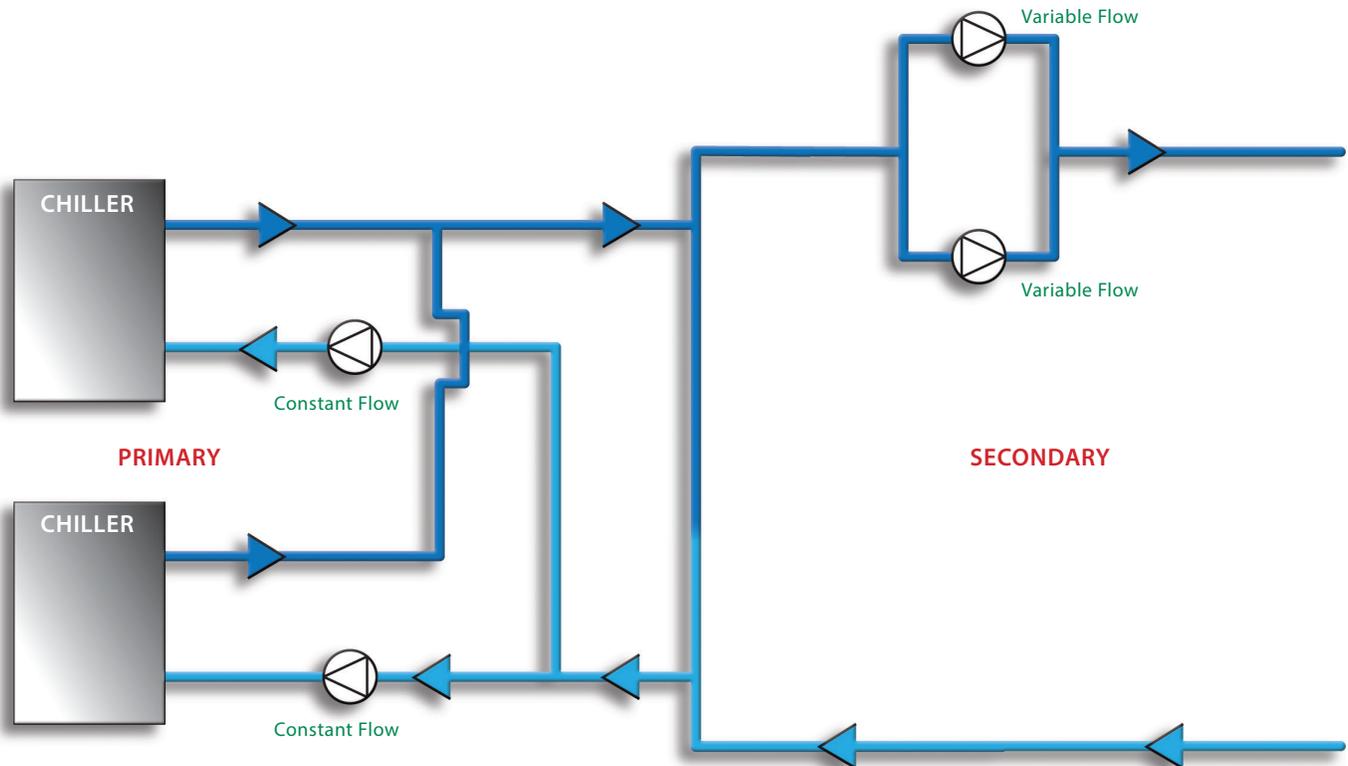
SCI Series

The benefits of Constant Flow SelfSensing pumps:

- Balancing through reduced speed – not false head
- Reduced speed increases equipment life
- Auto-adjust over the life and fouling of the system
- SelfSensing ProBalance® reduces balancing contractor expenses and hassles

The benefits of Variable Flow SelfSensing pumps:

- Lower install costs – no sensors or wiring
- No error in setpoint
- Improved system efficiency and performance
- Reduced coordination and construction schedule with SelfSensing ProBalance®

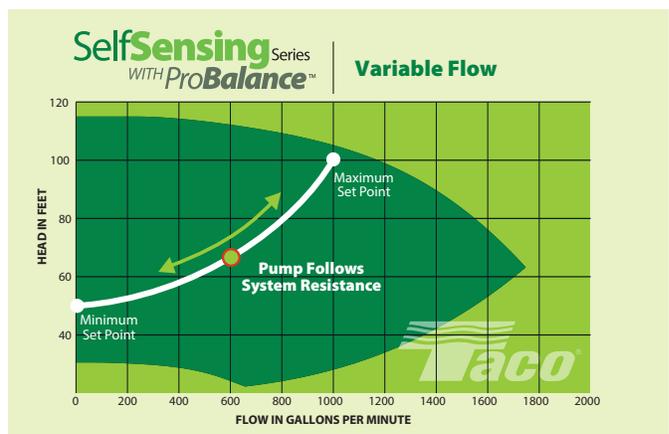
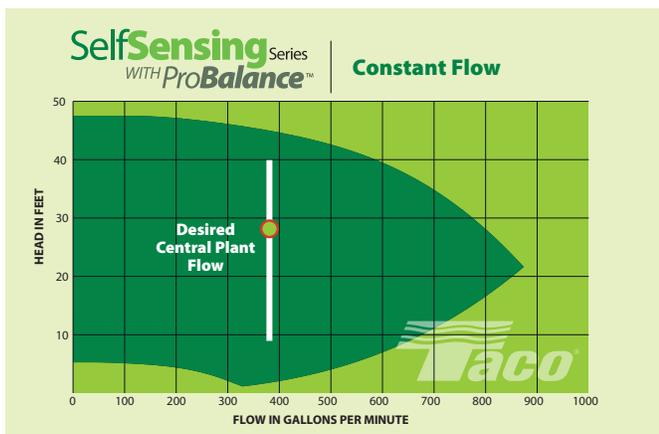


Constant Flow Mode

SelfSensing CONSTANT flow is self-balancing and automatically adjusts speed to maintain user-defined flow set point.

Variable Flow Mode

SelfSensing VARIABLE flow adapts to system pressure variations and automatically follows the system resistance curve to meet demand.



Presenting DIY Balancing

Every HVAC pump needs to be balanced by an expert who must account for construction variables and safety factors. Whether constant or variable speed, the balancing process has to be addressed at commissioning and startup. But what if you could zero in on the true system resistance without inducing false head and **balance the pump yourself**? You can with Taco's SelfSensing ProBalance® technology.

The benefits of Do-It-Yourself balancing:

- You'll have control over your construction schedule and subcontractors
- Reduced installation costs
- You can help a LEED team get a job into their budget

What kind of savings can you expect?

Balancing a constant flow system with Taco drives saves lots of energy and increases pump life dramatically. For example, a pump that would have run at 1750 rpm @ 60hz is balanced with SelfSensing technology to run at 1458 rpm @50hz. Now the pump consumes 57% of the horsepower and runs 291 fewer revolutions per minute. The savings translate to 419,000 cycles per day or 150M fewer cycles very year. As a result, the pump lasts longer, requires less maintenance, and uses less energy. To illustrate, using best practices and balancing with drives saved a Tennessee hospital \$3,000 in yearly electrical costs on 100 hp chiller pumps running at 47 hz instead of 60 hz.

The ultimate in pump protection and electrical safety.

The SelfSensing Series also features automatic alerts with optional shutdown for no-flow, dry-run, and end-of-curve operation. That means the seal is safe should someone forget to open a valve or to run the pump without water. What's more, the



unit is electronically protected for overload and locked rotor conditions per UL 778 and CSA C22.2 No. 108, so the motor is protected – a real crowd pleaser for insurance companies.



**If you're serious about saving energy and system wear,
the Taco SelfSensing Series is the way to go.**



Smart farming with a smart hydronic system

System designer Matt Aungst, Co-Owner
Total Energy Solutions, LLC

To chicken farmer Earl Ray Zimmerman of Lancaster County, PA, keeping his 30,000 broilers (chickens for meat) warm at a steady temperature is critical to his profit picture. Sustainability is at the top of his list, too, so Matt Aungst of Total Energy Solutions, LLC teamed up with Taco to create a sustainable, precision hydronic chicken house heating solution. Matt used Taco's free Hydronic System Solutions® software to design the system.

Recycling waste for heat

Using chicken litter as a biofuel, the heating system combines advanced combustion technology with sophisticated heat distribution via custom controls and fan-coil technology not yet seen in the U.S. poultry industry.

Temperature critical

Depending on the age of the birds, one house can call for up to 600 MBH at any given time, though an average winter heat load is between 200-300 MBH per house. The two pre-programmed Taco SKV3009

SelfSensing pumps each include a motor-mounted variable frequency drive to deliver the precise amount of flow and pressure needed for the two chicken houses. The redundant pumps, plumbed in parallel, accurately respond to changes in system demand without the need for pressure sensors.

"A specific program enables the pumps to 'know' exactly what speed to run at any given time. You get tremendous energy savings this way," says Aungst.

The total system is so accurate that the eight thermistors, spread evenly across each 22,500 sq. ft. house, all read within one degree of each other. Taco expansion tanks, air separators, Plus Two multi-purpose valves, and a 4903 Air and Dirt Separator complement the system.

At a time when food prices are hiking nationally, smart farming with hydronics keeps everyone's costs down.

