

SED2 VFD Unique Applications and Features

Siemens SED2 Variable Frequency Drives (VFDs) offer many unique features like a built-in operator panel, a wide range of I/O and integral multiple communication protocols. They also feature unique applications that can simplify facility management tasks.

Direct Ni 1000 Sensor Connection

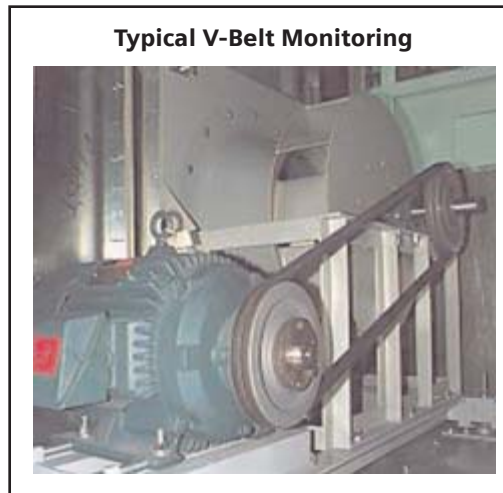
With direct connection of Siemens Nickel 1000 Ohm temperature sensor inputs, it is easy to implement low-cost temperature control loops with one cooling or heating sequence. The built-in PID controller has anti-windup functionality optimized for HVAC applications. The PID controller has a hibernation mode which stops the drive if it runs at a user-defined minimum speed for a given time.

Pump/Cooling Tower Cascading Feature

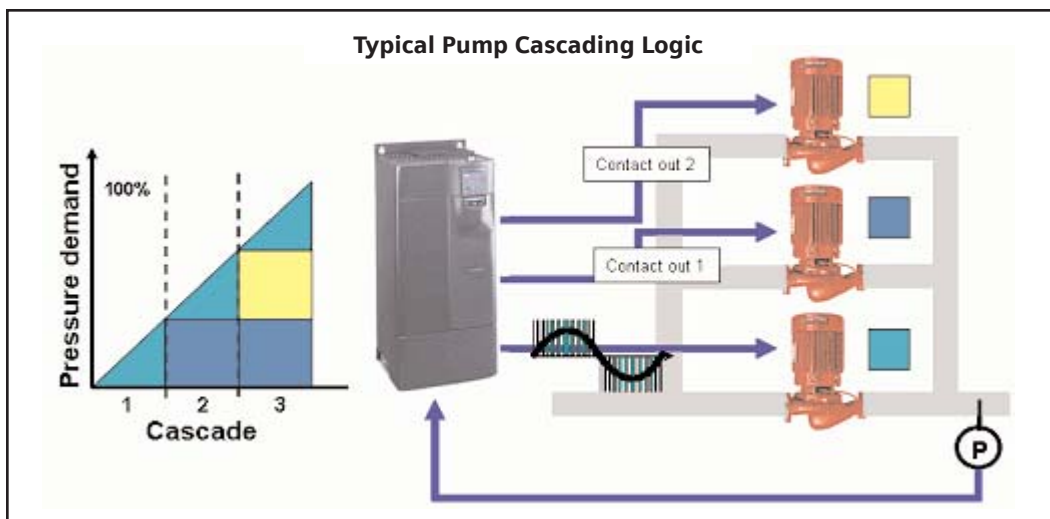
This unique function saves operating costs by allowing for the control of up to two additional, cascaded pumps or fans. With the two relay output contacts, the SED2 performs the cascading logic without additional controllers or I/O cards. As with the Ni 1000 sensor, the PID controller has a hibernation mode which stops the drive if it runs at a user-defined minimum speed for a given time.

V-Belt Monitoring

SED2 drives save maintenance costs by ensuring reliable V-belt monitoring without the expense of an external sensor. Using built-in control logic, the SED2 drive continuously monitors both motor speed and torque based on typical operating loads and compares them to a user-defined tolerance band. Once the tolerance band is out of range, such as when a fan drive belt is thrown and the motor runs freely, the drive trips to alert of a V-belt failure. The SED2 is also able to monitor a pulse sequence from a sensor to detect the rotation of a fan shaft.



Typical V-Belt Monitoring





Low Harmonics Design

Harmonics cause an increase in supplied power (KVA) over what is really needed (kW or HP). Therefore, everything in the AC supply line must be sized accordingly, all the way back to the power company - including the generator, transformers, switchgear, wires, contactors and fuses. They all have to be bigger to handle the load. This can be expensive!

Siemens SED2 VFDs utilize a unique low-harmonics design that sets it apart from competitors by reducing input line harmonics without the use of line reactors or DC Link Chokes. While other drives use filtering devices to control harmonics, which add cost and complication, the SED2 VFD design provides a unique method of reducing input line harmonic currents without the addition of extra components. The SED2 drive uses lowered DC link capacitance to minimize harmonics in a cost-effective manner. The controller utilizes

powerful control strategies to compensate for the effects of the lower level, high ripple, DC link voltage. This assures a smooth, quiet operation of the fan or pump motor. Using SED2 VFDs is a cost-effective way to reduce input line harmonics.

Harmonee - Harmonics Calculation Tool

Siemens free Harmonee™ software will provide you with comprehensive harmonics analysis data. In addition to calculating harmonics in a facility, Harmonee provides other comparative and critically important data in assessing harmonics. Contact us to request your free copy of Harmonee.

VFD A-Z CD

The VFD "A to Z"™ CD-ROM is an educational tool that explains Siemens SED2 VFD capabilities. It includes multimedia presentations and technical training videos on the SED2 family of products, conventional and e-bypass options, harmonics basics, and a documentation library. Contact us to request your free copy of VFD A-Z.

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