UNICO

Overview

UNICO's fan/pump software provides energy-saving variable-speed control for air handlers, blowers, cooling towers, chillers, boilers, and other fan or pump applications. Both flux vector and variable-frequency (V/Hz) versions are available for use with UNICO's 1100 family of drives. The software integrates motor and process control into a single unit that delivers superior performance and efficiency, flexibility, and ease of use.

Features

Variable-Speed Control

Motor speed is adjustable either locally from the keypad or a potentiometer or remotely from a building automation system (BAS). The drive will follow a 0 to 20 mA or 0 to 10 V DC analog speed reference and can switch between them based upon a digital input or serial command. The speed setpoint can also be programmed serially. In addition, seven input-selectable preset speeds, each with its own acceleration and deceleration settings, are provided for use with a BAS. Controlled S-curve acceleration and deceleration smoothes speed transitions and prolongs equipment life by minimizing shock. Customizable units adapt all speed references to application engineering units.

Keypad or Remote Control

The drive can be started and stopped manually from the keypad or automatically via a building automation system using digital inputs or serial commands. Keypad controls can be locked out for safe remote operation.

Process Control (PID)

Optional closed-loop PID control eliminates the need for an external process controller. Using temperature, pressure, or flow feedback from an appropriate sensor, the program regulates motor speed to maintain the requested process setpoint. Overpressure and no-flow protection for pumping systems shut the drive down in the event of a burst pipe, clogged pump, or other abnormal condition.

Automatic Restart

The drive can automatically restart following a fault trip. The number of restart attempts and the interval between them are selectable.

Spinning Restart

A spinning restart feature allows the drive to start smoothly into a rotating load, then accelerate or decelerate to speed without tripping.

Features
(continued)

Critical Frequency Avoidance

Three skip frequencies with adjustable windows enable the drive to avoid operating at speeds that resonate with the driven equipment. This is particularly important for stable operation with cooling towers.

Stopping Methods

Selectable stopping methods include decelerate-to-stop, coast-to-stop, DC injection braking, and DC hold braking.

Multimotor Capability

Variable-frequency software allows multiple motors to be operated in parallel from a single drive for installation cost and energy savings.

Power Loss Ride-Through

Extended power-loss ride-through helps avoid nuisance trips during brownouts or other outages. The 16 MHz variable-frequency control option additionally provides an adjustable deceleration time during ride-through.

Programmable I/O

Depending upon the software version, the user can specify the functionality of certain inputs and outputs to suit the requirements of the application, including using an analog signal to specify the value of selected parameters.

Communications

All popular industry-standard serial protocols are available for communicating with a building automation system, including Modbus RTU, ANSI, N2, LonWorks, BACnet, DF1, and Profibus. This allows the BAS to remotely monitor and control the drive as well as modify parameters.

Inputs & Outputs

The following inputs and outputs are typically provided for interfacing the controller with the system:

Inputs
- start
- run enable
- jog
- reverse
- fault reset
- remote
- programmable
- no external trip
- preset speed BCD 1
- preset speed BCD 2
- preset speed BCD 4

Analog Inputs
- speed or torque reference
- remote speed or torque reference
- programmable

Outputs
- ready relay
- programmable relay
- programmable open collector

Analog Outputs
- speed or torque
- programmable

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