

## Industrial Mixers

### Application Overview

Industrial mixers are widely used in food processing, rubber, and plastics, pharmaceutical, chemical, agricultural, tire, pulp and paper, automotive, adhesive and sealant industries. The primary application challenge is to maintain precise speed through changing material viscosities while protecting the mixing equipment from over-torquing or jamming. Control Techniques offers a wide range of AC Variable Frequency Drives (VFDs), DC Drives and options to meet the control needs of industrial mixer applications.

### Application Requirements

#### Control & Connectivity

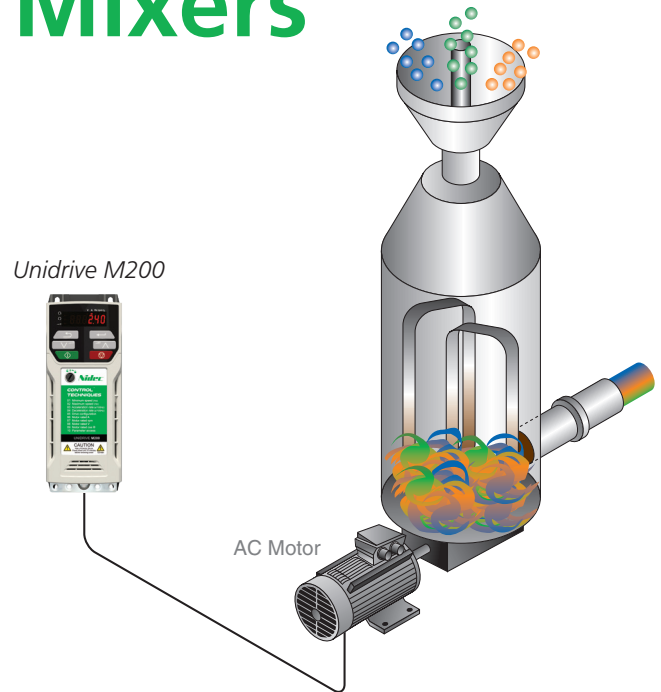
- Precise speed control through varying loads
- High breakaway torque
- Standalone or multiple drive system
- Operational flexibility with communications, expandable I/O, and onboard PLC
- Batch mixing control

#### Protection

- Motor, machine and system protection
- Minimize mechanical stress with features like frequency skipping to avoid mechanical resonance zones

#### Minimize Operating Costs

- Energy optimization
- Maximize uptime / high reliability
- Ease of setup /flexible control
- Intuitive diagnostics



### Control Techniques' Solutions

#### VFDs, DC Drives & Packaged Drives

- Wide horsepower range, available up to 4,200 HP
- Global voltage ratings (115 V, 208-240 V, 380-480 V, 575 V, 690 V)
- Global standards (UL, cUL, CE, C-Tick, ISO 14001, RoHS)
- NEMA 1, UL Type 1, and NEMA 12 Package options; consult factory for NEMA 3R and NEMA 4X solutions
- On-board PLC functionality programmed using complimentary Machine Control Studio software
- Extended I/O option module adds analog inputs, digital I/O, and relays
- All major fieldbus and Ethernet connectivity options such as EtherNet/IP, DeviceNet, PROFINET, and EtherCAT
- Modbus RTU vis RS485 with optional AI-485-24V-Adaptor
- Complimentary Connect configuration software with built-in scoping tool
- Industry leading warranties

# Industrial Mixer Solutions

## Control Techniques'

### Performance Advantages

#### AC Drives

#### Control

- On-board PLC for mixer system control
- Excellent frequency accuracy
- Very high frequency/speed resolution
- Open Loop – 0.001 Hz
- Closed Loop – 0.001 rpm
- Wide constant torque speed range
- Local / Remote operator controls
- Speed / torque control
- 8 preset speeds; 8 sets of accel / decel rates
- Jog with independent accel / decel rates
- Volt / current / pulse speed reference options
- Built-in energy calculator (for batch control)

#### Total System Protection and Uptime

- S-ramp soft start for prolonged mechanical life
- Built-in diagnostics
- Intelligent electronic motor overload protection
- Safety interlock
- Very high quality / product reliability
- Automatic restart
- Easy setup and cloning using keypad, SD card adaptor, or complimentary PC tools
- Auto tune - static and rotational
- Last 10 trips logged and timestamped with optional plain-text Real Time Clock keypad



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