

Conveyors

Conveyors move towards energy savings



Control Techniques variable frequency AC drives dramatically reduce starting inrush current and facilitate smooth starts to avoid losing or damaging product. Soft starting extends conveyor life and reduces maintenance by eliminating the wear and tear of jerking the machine into operation. Additionally, S-ramp functionality further reduces shock loads and extends machine life.

AC drives operate conveyors at the most desirable speed for the process. Reducing the speed is a great way to reduce the number of starts and stops while saving energy. Slowing the conveyor by 20% can save nearly 20% of the energy used to operate it. Changing speeds can also help develop a constant feed rate into the next operation and avoid jams while optimizing output.

Conveyors:

Horsepower: Up to 4,200

Savings: Up to 25%

(Depends on duty cycle.)

Conveyor applications range from the smallest parts conveyor to the world's largest, bringing phosphate ore 62 miles across the Saharan desert for loading onto ocean bound ships. Conveyors move material from one location to another on wheels, rollers, screw, belts, or slats. Conveyors are constant torque applications which means the torque stays the same regardless of speed – and energy used is proportional to speed.

These applications may be started across-the-line but starting large motors across the line in remote areas can lead to low voltage conditions which can adversely affect other electrical equipment at the site.



Conveyor Solutions

Conveyors may be used to raise or lower the product great distances. When heavy items are lowered more slowly than the conveyor's friction would naturally allow them to fall, the motor acts as a generator and returns energy to the drive which may then dissipate it to dynamic braking resistors, share it with other drives over a common DC bus or regenerate it back to the power line. All three provide braking torque to keep conveyor speed under control. Each has advantages in different situations. The first system is simple but dissipates heat which may increase cooling load. The latter two reduce the electric bill every month but add initial cost. Control Techniques can evaluate your application and help you decide which is best for your situation.

Look for down feeding conveyors with regenerative potential for maximum energy savings.

AC drives improve power factor (>0.95) and lower demand to further lower your energy bill.

Control Techniques helps you document energy savings by including a kWh energy, run-time, and running energy cost meters in the drive. Measurement is the first step towards improvement.



Large Packaged AC Drives

Control Techniques has the latest energy savings and integrated control technology. The included PLC functionality, PID controller, and optional advanced machine control module can eliminate external controls, even for relatively complex load sharing or redundancy capabilities. Additionally, a machine control module can be added for an even greater functionality. Powerful communication options such as EtherNet/IP, EtherCAT, and PROFINET provides a simple path for integrating individual drives into larger systems.

Contact Control Techniques for assistance in identifying energy savings opportunities in your facility.

World Class Products & Support

- Assistance estimating energy savings
- Worldwide Application & Field Service Network
- 24/7 support line +1 800 893-2321
- Custom software and panel configurations



AC Drives fractional to 4,200 HP