



white paper

Conserve power: Be Green, Save Money

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Creating Logistics Results



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Introduction

With Power, Less Can Mean More...More Environmental, More Money

Operators of distribution centers, warehouses, and production operations are learning that “green” initiatives are not only good for the environment, but “being green” can also mean saving money. Adding more pressure to this scenario is the prediction that energy costs will continue to rise in the future. Also, earth friendly initiatives can improve your company’s image with customers, stockholders, and the public.

The “green” money is created primarily in two areas: energy management and rebates. By reducing the energy required to run your facility, your operational costs go down; add to that an annual rebate check from the local power company and you’ve got real money. For example, one distribution center that upgraded their conveyor system controls and added a new energy saving conveyor system, received a rebate for \$40,000 from their electric power provider.

Slow Down or Go to Sleep

In operations that use mechanized technology such as conveying and sorting systems, there are opportunities to reduce the amount of energy required. Conveying and sorting systems are typically turned on at the beginning of the day and run full speed all day until turned off at the end of the day. However, typical operations do not have high rate material flow throughout the shift. So why not design the control system to match energy usage with the spikes in throughput? With “run on demand” energy management you can.

Package conveying and sorting technology can be designed to automatically slow down and operate in slow speed during periods of low carton flow activity. Why run at top speed when it is not required? Control systems monitor activity on the system and slow down or speed up to meet throughput demands and therefore only use enough power to do the job required. Operating at slower speeds means reduced energy consumption as well as reduced wear and tear on equipment, therefore increasing the life of the system while reducing maintenance costs. Furthermore, when there is no carton flow for a pre-set period of time, control systems detect the lack of activity and can turn off sections of conveyor where there is no carton flow.

In addition, new conveyor technology is making it easier to save energy. Low voltage, 24 or 48 volt, motorized roller conveyor is inherently more energy efficient, and motorized roller conveyor systems typically do not use compressed air systems to operate, further reducing energy costs. New sorter systems now operate at slower speeds while still providing high sort rates.



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Temperature & Energy

Temperature controlled warehouses present significant energy savings opportunities. One method of reducing energy in these operations is to store more product in less cube space. Implementing high density storage systems, such as automated storage and retrieval systems (AS/RS), can reduce energy used for freezing and cooling by 50% (more storage in less refrigerated space). Energy costs for cooling are higher than heating. Furthermore, most cooling loss is from the roof; AS/RS has a small roof surface (when compared to a conventional warehouse), smaller footprint, and high density storage configurations. Added benefits of using ASRS for the temperature controlled warehouse include reduced worker exposure to harsh environment, reduced land cost, and improved inventory control.

Lights Out

Energy management in the distribution center means keeping the lights off in areas where there is no activity. Pick modules may have 3 or 4 levels. Each level requires lighting. Motion sensors in order fulfillment aisles will shut off the lights during periods of no activity. Also, new energy efficient lighting systems may have an attractive return on investment business case for replacing existing low efficient lighting. Finally, operations that use automated storage and retrieval systems can operate the ASRS module “lights out” since these systems do not allow operators to enter the storage module.

About Dematic

Through an integrated approach to process, IT, technologies & professional services Dematic develops best practice logistics systems for production, warehousing, and distribution operations. The engineered solutions are built around process improvements, material handling automation, controls & software. Technologies include light and voice directed order fulfillment, storage/staging systems, conveying & sorting systems, trailer loading systems, WCS software, controls, Quick Tag RFID compliance systems, and performance management software.

Throughout our years in business, from Rapistan to Dematic, our focus has been on customer satisfaction.

If you are interested in learning more about this topic and how we can help automate your distribution center, please contact Dematic at (877) 725-7500.

Continuing the *Rapistan* Tradition