

# Variable Speed Drives And Stream Compressors For Refrigeration Designed For Energy Efficient Solutions



## Reducing Energy Consumption With Drive Technology

Food retailers, contractors and refrigeration system manufacturers are investing in modern refrigeration systems to maximize energy efficiency and reduce operational costs. Emerson Climate Technologies is a global leader in providing integrated cooling solutions. These include compressors and drives for commercial refrigeration applications - innovative and reliable products that fulfill the needs of today's market.

Variable speed drives can play a critical role in the performance of a refrigeration system. The motor that drives the compressor typically consumes a high percentage of the electrical energy in a refrigeration system. Using variable speed drive, energy consumption can be significantly reduced while also enhancing system performance. Control Techniques, a business of Emerson Industrial Automation, has tailored its variable speed drives to semi-hermetic Copeland™ Stream compressors. Thereby the drive enables the compressor capacity output to match the needs of the system and eliminates unnecessary energy consumption.

## Main Features

Control Techniques' drives are simple to use, compact and offer great value. They provide excellent performance and have on-board PLC functionality, click-in modules for I/O, Ethernet, and Fieldbus communications.

The Commander SK drive has many functions, including oil distribution at low speed, compressor run time balancing and many further customized functionalities.

## Optimized Drives

Control Techniques' drives are released for all semi-hermetic Copeland™ compressors. The drive parameters have been optimized to provide the best possible starting performance for different operating conditions.

## SmartStick With Pre-Configured Parameters

The Control Techniques unique SmartStick covers a wide selection of different operating parameters for system set-up. This guarantees quick and easy installation and maintenance. By inserting the SmartStick into the front facia of the drive, it enables automatic and quick selection of the required parameters for each individual compressor model.



## Drive Selection For Copeland™ Compressors

Selecting an inverter for the different compressor models is made easy by the cross reference list provided in Emerson's Selection Software. In addition to Stream compressors, the cross reference list is also available for the existing Flapper and Discus compressors. You can find more information about Select 7 and Select online under [www.emersonclimate.eu](http://www.emersonclimate.eu)





### CoreSense™ Features

Stream CoreSense Diagnostics is compatible with variable speed drives. Some of the more advanced features need a closer integration with the software of the drive. Control Techniques drives fully utilize advanced CoreSense features, thereby providing the best cooling solution on the market.



- Optimal starting performance increases the lifetime of mechanical parts
- Reduced starting currents help decrease the cost of installation
- Lower pressure differences reduce mechanical stress on valves and pipes
- Ability to reach the temperature set-point faster thanks to improved control, thus increasing energy savings
- Inverter communication allows process data acquisition and diagnostics via PC or remotely via Modbus®

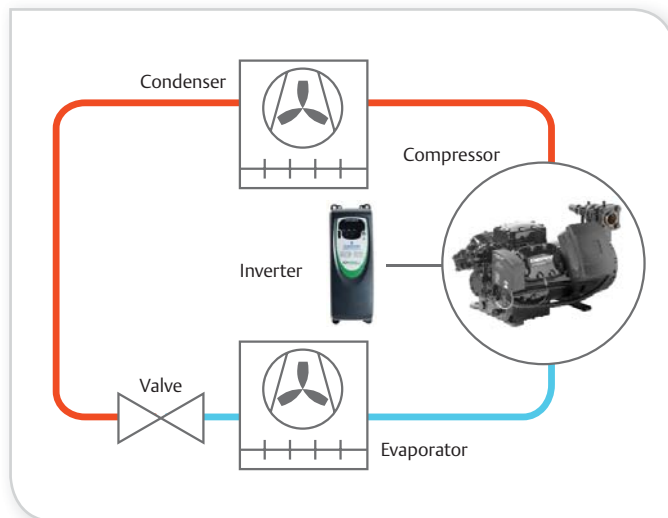
### Communication

Control Techniques drives can communicate with a refrigeration system controller using a wide range of communication protocols. Modbus® RTU is offered as a standard protocol. Other protocols such as Ethernet, LonWorks®, CANopen® and PROFIBUS® are available on request.

### Key Benefits Of Using Control Techniques Drives In Combination With Copeland™ Stream

- Continuous regulation allows an increase in the evaporation temperature against on/off systems, resulting in energy savings
- Higher cooling quality increases the shelf life of refrigerated and frozen goods

### Drives In The Basic Refrigeration Cycle



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For more details, see [www.emersonclimate.eu](http://www.emersonclimate.eu) and [www.controltechniques.com](http://www.controltechniques.com)

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