



# ***NEW** from Drake*

## **High-Efficiency Air-Cooled DIGITAL Scroll Chillers**

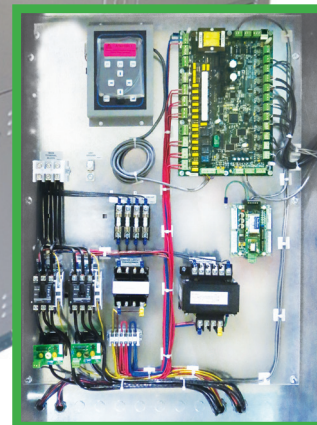
**Drake** continues to bring new innovations and the latest technology to our family of chillers. Introducing our newest line of **High-Efficiency Air-Cooled DIGITAL Scroll Chillers**. Digital technology means precision temperature control, reduced compressor cycling, and lower energy consumption.

 **AIR-COOLED CHILLERS**

 **DIGITAL SCROLL**  
PACKAGED & SPLIT-SYSTEMS

- 4 to 20 HP
- R407C & R404A
- MCS Microprocessor Controller
- Digital Scroll Compressor with Crankcase Heater
- EPA Compliant

PACT120D  
Digital Model Shown



Wiring and  
MCS Microprocessor

*See Other Side for MCS Microprocessor  
and Digital Scroll Details...*

**Call: (888) 289-7299**

**[www.DrakeChillers.com](http://www.DrakeChillers.com)**

## MCS Microprocessor Features

### Microprocessor Description

The Magnum is a rugged microprocessor based controller designed for the hostile environment of the HVAC/R industry. It is designed to be the primary manager of the package it is controlling. The Magnum provides flexibility with setpoints and control options that can be selected prior to commissioning a system or when the unit is live and functioning. Displays, alarms and other interfaces are accomplished in a clear and simple language that informs the user as to the status of the controller.



### Controller Specifications

Dimensions ..... 12.0"w, 8.0"h, 2.0"d  
 Mounting Holes ..... Mounts on a backplane using eight #6 sheet metal screws  
 Operating Temperature .... -40°F to +158°F (-40°C to +70°C)  
 Storage Temperature ..... -40°F to +158°F (-40°C to +70°C)  
 Microprocessor ..... Zilog eZ80 Acclaim! @ 50mhz  
 Sensor Inputs (SI) ..... 12 inputs 0-5vdc (10-bit A/D)  
 Digital Inputs ..... 4 inputs 0 or 5vdc only  
 Relay Outputs (RO) ..... 10 outputs 6.3amps @ 230vac  
 Analog Outputs (AO) ..... 4 outputs 0-10vdc  
 Printed Circuit Board ..... Six layer with separate power and ground planes  
 Input Power (Standard) .... 115 or 230vac  $\pm 10\%$  50/60Hz @ 77°F (25°C) ambient, 20VA max  
 (Voltage is field selectable)  
 MCS-I/O Comm Port ..... 1 @ 38,400 baud  
 RS-485 Comm Port ..... 1 @ 19,200 to 115,200 baud, select from MCS Protocol, Modbus RTU.  
 Built-in RS-485 to RS-232 converter  
 Ethernet ..... 10 Mbps Ethernet supporting MCS IP, BACnet IP and Modbus IP at the same time  
 Real Time Clock ..... Battery backup  
 Power Detection ..... Automatic power fail reset

## Copeland Scroll Digital™ Compressor

### Advantages

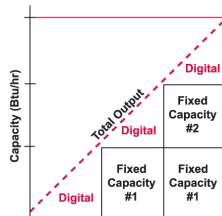
- Variable modulation for precise temperature control
- Highly flexible load matching, from 10-100%
- Less costly and more reliable than variable speed
- Simple control methods
- Significantly improved efficiency vs. hot gas bypass and other methods of modulation
- Linear power reduction relative to modulated capacity
- Based upon field-proven Copeland Scroll® design

### Benefits

- Improved load matching capability
- Reduced compressor cycling
- Reduced power and energy consumption
- Decreased electrical load at startup
- Can be applied to multiple evaporator systems
- Efficient modulation of Copeland Scroll compressors for high, medium & low temperature applications
- Low temperature model equipped with vapor injection



Copeland Scroll Digital compressors can be used as the lead compressor and paired with fixed capacity scrolls on a parallel rack to provide superior load matching and reduce compressor cycling.

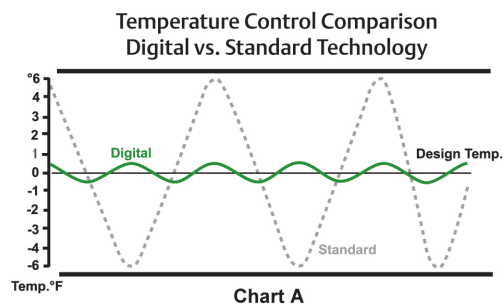


### A Superior Solution for Food Safety

When we say “*precision temperature control*”, we mean maintaining box temperatures within  $\pm 0.5$  degrees F (see Chart A). This provides supermarkets and food service establishments with the security of knowing that their food is safe from harmful bacteria growth and other harmful micro-organisms.

### A Superior Solution for Energy Savings

Traditional modulation technologies consume close to full load energy no matter what the required capacity. Digital Scroll compressor technology reduces power consumption linearly as it modulates capacity resulting in optimum system performance and control, as shown in Chart A.



**Have Questions? Give Drake a Call: (888) 289-7299**

Digital-Scroll Mailer-11.29.12

**www.DrakeChillers.com**