

**NO:** 05-11  
**DATE:** 04/04/11  
**TO:** **EMERSON CLIMATE TECHNOLOGIES WHOLESALERS**  
**-EXECUTIVES**  
**-PRODUCT MANAGERS**  
**-COPELAND® TECHNICAL SPECIALISTS**  
**-BRANCH PERSONNEL**

**SUBJECT: COPELAND DISCUS® DIGITAL™ COMPRESSORS**

We are pleased to announce the launch of 3D, 4D and 6D Copeland Discus® Digital™ reciprocating compressors for High, Medium, & Low Temp refrigeration applications with R-404A, R-407A or R-407C refrigerants. Please refer to Application Engineering Bulletin AE21-1355 for further details on the application of Copeland Discus Digital compressors.



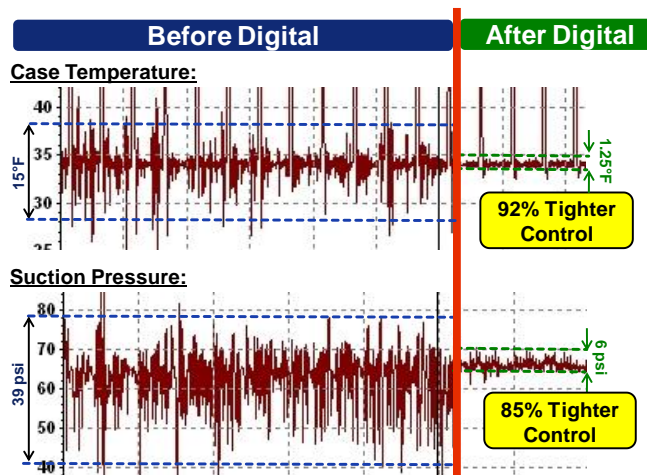
The Copeland Discus Digital compressor offers different capacity modulation depending on the model:

Model	Capacity Modulation
3D	10-100%
4D	50-100%
6D	33%
6D Low Temp with demand cooling using R-407C	66-100%

When applying this advanced capacity modulation, the system benefits are:

- Reduced product shrink through precise temperature control as shown in Figure 1
- Reduction in system energy consumption by:
  - Tighter and increased average suction pressure control as shown in Figure 1
  - Reduced Defrost Time
- Reduced maintenance through improved compressor reliability and reduced contactor wear resulting from up to 90% reduction in compressor cycling

**Figure 1: Copeland Discus Digital Improvement in Case Temperature and Suction Pressure Control**

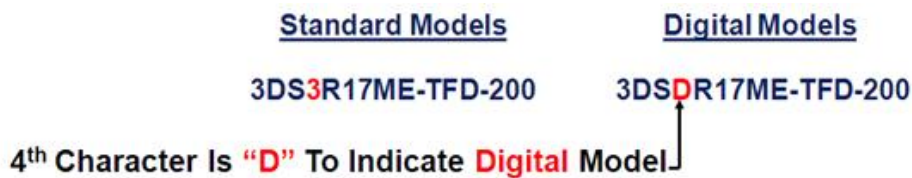


This innovative capacity modulation technology will revolutionize the way parallel systems, like racks, are designed by eliminating the need for uneven parallel compressor selections. This will enable a rack to consist of similar sized compressors. This simplifies compressor servicing and has the potential to lower system first cost.

The Copeland Discus Digital compressor modulation technology is available on Copeland Discus 3D, 4D, and 6D compressor and is identified by a “D” in the fourth digit of the compressor model number as shown in Figure 2.

The base Copeland Discus Digital models are listed in Figure 3. For 4D, see Figure 4. For 6D, see Figure 5.

**Figure 2: Copeland Discus Digital Compressor Nomenclature**



**Figure 3: 3D Digital Compressor Line Up**

Standard Model Number	Digital Model Number
<b>Low Temperature Models</b>	
3DA3F28K*- ###	3DADF28K*- ###
3DB3F33K*- ###	3DBDF33K*- ###
3DF3F40K*- ###	3DFDF40K*- ###
3DS3F46K*- ###	3DSDF46K*- ###
<b>Optimized Medium Temperature Models</b>	
3DF4S11M*- ###	3DFDS11M*- ###
3DS4S12M*- ###	3DSDS12M*- ###
<b>Dual Medium &amp; High Temperature Models</b>	
3DA3R10M*- ###	3DADR10M*- ###
3DB3R12M*- ###	3DBDR12M*- ###
3DF3R15M*- ###	3DFDR15M*- ###
3DS3R17M*- ###	3SDSR17M*- ###

Figure 4: 4D Digital Compressor Line Up

Standard Model Number	Digital Model Number
Low Temperature Models	
4DA3F47K*-###	4DADF47K*-###
4DH3F63K*-###	4DHDF63K*-###
4DJ3F76K*-###	4DJDF76K*-###
Optimized Medium Temperature Models	
4DA3S13M*-###	4DADS13M*-###
4DH3S16M*-###	4DHDS16M*-###
Dual Medium & High Temperature Models	
4DA3R18M*-###	4DADR18M*-###
4DB3R20M*-###	4DBDR20M*-###
4DH3R22M*-###	4DHDR22M*-###
4DJ3R28M*-###	4DJDR28M*-###

Figure 5: 6D Digital Compressor Line Up

Standard Model Number	Digital Model Number
Low Temperature Models	
6DH3F93K*-###	6DHDF93K*-###
6DJ3F11M*-###	6DJDF11M*-###
Dual Medium & High Temperature Models	
6DH3R35M*-###	6DHDR35M*-###
6DG3R37M*-###	6DGDR37M*-###
6DJ3R40M*-###	6DJDR40M*-###

**NOTE:** For Copeland Discus Digital Performance Information with Approved Refrigerants, refer to Emerson Climate Technologies Online Product Information at [www.emersonclimate.com](http://www.emersonclimate.com)

Copeland Discus Digital™ service compressors with POE oil (-800 BOM) are available from the Emerson Distribution Center for any Discus Digital compressor field failures.

It is important to understand the Copeland Discus Digital compressors have some unique service parts. See Figure 6 for 3D, Figure 7 for 4D & 6D.

Figure 6: 3D Digital Service Parts

3D Digital Service Parts List	
Part Number	Part Description
902-0317-00	Head – Service Kit
998-6661-30	Medium Temp VP Plate – Service Kit
998-6661-31	Low Temp VP Plate – Service Kit
910-0111-00	High Cycle Solenoid Valve Kit
998-6669-00	Gasket Kit
923-0084-00	High Cycle Solenoid Coil Kit 24v-50/60Hz
923-0084-01	High Cycle Solenoid Coil Kit 120v-50/60Hz
923-0084-02	High Cycle Solenoid Coil Kit 220v-50/60Hz
543-0086-00	Digital Compressor Controller (IDCM Board)
985-0109-07	Sensor – Temperature Probe
998-0574-10	Head Fan Bracket Kit



**Figure 7: 4D & 6D Digital Service Parts**

4D & 6D Digital Service Parts List	
Part Number	Description of Items
902-0323-00	Head – Service Kit
998-2661-66	Medium Temp VP Plate – Service Kit
998-2661-65	Low Temp VP Plate – Service Kit
910-0111-00	High Cycle Solenoid Valve Kit
998-6670-00	Gasket Kit, Oversize Bore, 4DB,4DC,4DH,4DK,4DL,4DP,6DB,6DC,6DD,6DH,6DK,6DL,6DP,6DW,6DY, 020-1378-01 .045”
998-6670-01	Gasket Kit, Oversize Bore, 4DJ,4DR,4DT,4DS,6DE,6DF,6DJ,6DR,6DS,6DT, 020-1378-03 .045”
998-6670-02	Gasket Kit, Oversize Bore, 4DA, 4DE, 4DN, 020-1378-05 .045”
998-6670-03	Gasket Kit, Oversize Bore, 6DG, 6DM, 020-1378-07 .045”
923-0084-00	High Cycle Solenoid Coil Kit 24v-50/60Hz
923-0084-01	High Cycle Solenoid Coil Kit 120v-50/60Hz
923-0084-02	High Cycle Solenoid Coil Kit 220v-50/60Hz
943-0088-00	Digital Compressor Controller (IDCM Board)
985-0109-07	Sensor – Temperature Probe

The Emerson Climate Technologies website provides additional product information at [www.EmersonClimate.com/CopelandDiscusDigital](http://www.EmersonClimate.com/CopelandDiscusDigital) and detailed product information including performance, electrical, and mechanical data by logging into the Online Product Information at [www.EmersonClimate.com](http://www.EmersonClimate.com).

Contact your Distribution Services Sales Manager or Customer Service with any questions regarding this information.