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## Phoenix DX Clean Power (18 Pulse) AC Drive

Poor power quality can be costly. Nonlinear loads, including AC Drives, introduce undesirable harmonic currents into the power system that can damage equipment, increase downtime, and ultimately drive up the cost of your electric utility bill. With electric utility deregulation, more attention is now being paid to peak demand charges, power factor penalties, and the added cost of harmonic distortion.

That's why we designed the Phoenix DX Clean Power AC Drive. The Phoenix DX Clean Power AC Drive uses 18 Pulse rectification to minimize both the voltage and current harmonic distortion on the AC power line. In fact, the Phoenix DX Clean Power AC Drive meets the stringent requirements of IEEE 519 1992 without the use of any additional external filters, line reactors, or drive isolation transformers. You get all the economic advantages of an AC Drive, reduced inrush current demand, and improved power factor, without the harmonics.

With all these real world benefits, and with new economic penalties tied to power quality, it's easy to understand why more and more people are turning to the Phoenix DX Clean Power AC Drive.



### **POWER QUALITY:**

- **MEETS IEEE 519 1992 FOR BOTH VOLTAGE & CURRENT HARMONIC DISTORTION.**
- **NO NEED FOR EXTERNAL FILTERS - NO MATTER WHERE THE DRIVE IS PLACED IN THE PLANT.**
- **ELIMINATES THE NEED FOR EXPENSIVE AND TIME CONSUMING HARMONIC ANALYSIS.**
- **AVOIDS RESONANCE PROBLEMS ASSOCIATED WITH INEFFICIENT HARMONIC FILTERS.**
- **PREVENTS OVERLOADING OF CIRCUIT BREAKERS AND FEEDERS.**
- **AVOIDS TRANSFORMER OVERHEATING.**
- **ELIMINATES PENALTIES FOR POOR POWER FACTOR FROM UTILITY COMPANY.**
- **CAN BE RUN OFF MOTOR / GENERATOR SYSTEMS WITH NEAR ZERO HARMONIC DISTORTION.**

**THREE YEAR WARRANTY**

**MADE IN USA**



# ENGINEERING SPECIFICATIONS

## ELECTRICAL

**Rated Input Voltage:** 200-250Vac, 380-500Vac, 500-600Vac  
-10% of minimum, +10% of maximum.

**Rated Input Frequency:** 48 to 63HZ

**Number of Phases:** 3

**Displacement Power Factor:** .95 or greater

**Efficiency:** 97% or greater at rated current

**Total Harmonic Current Distortion:** Meets IEEE 519-1992 Table 10-3  
≤ 5% at full load and speed

**Total Harmonic Voltage Distortion:** Meets IEEE 519-1992 Table 10-2  
≤ 3% Special Applications  
≤ 5% General System  
≤ 10% Dedicated System

## CONTROL

**Control Method:** Sine coded PWM with programmable carrier.  
Space Vector control.

**Output Voltage:** 0 to rated voltage

**Output Frequency Range:** 0 to 600 Hz.

**Frequency accuracy:** Analog reference: 0.1% of max frequency.  
Digital reference: 0.01% of max frequency.

**Frequency resolution:** Analog reference: 0.06Hz at 60Hz.  
Digital reference: 0.0005Hz at 60Hz.

**Accel / Decel:** Adjustable 0.1 to 3200 sec.

**Drive Overload:** High Overload Capacity Drives: 150% of drive rated output for one (1) minute.  
Normal Overload Capacity Drives: 120% of drive rated output for one (1) minute.

**Inverse Time Overload:** Programmable for class 10, 20 and 30 protection with speed sensitive protection to comply with N.E.C. Article 430.

**Current limit:** Proactive current limit programmable in % of motor rated current.

**Braking torque:** Approximately 20%.

**Control power ride-thru:** Two (2) seconds or greater, depending on load.

## ENVIRONMENTAL

**Ambient Temperature:** -10°C to 40°C (14°F to 122°F)  
Without derating.

**Storage Temperature:** -40°C to 70°C (-40°F to 158°F)

**Altitude:** Sea level to 3300 Feet [1000m]  
without derating.

**Humidity:** 95% relative humidity non-condensing.

**Vibration:** 9.8m/sec<sup>2</sup> (1.0G) peak.

**Surge Protection:** Line Transients to 6000V  
IEEE C62.41-1991 Category B

**Noise Immunity:** Showering Arc - 2000V Peak  
EN50082 - 1, 2

**Input R.F.I Filter:** Standard on all models.

## PHYSICAL ATTRIBUTES

**Mounting:** Free Standing Enclosure

**Nema Rating:** Type 1 (IP20) as Standard  
Type 12 (IP54) Optional  
Type 4 Optional

**Construction:** Steel Construction (Reduces E.M.I.)

380-500VAC (-10% to +10%) <sup>1</sup>						
NEMA 1 Catalog Number <sup>2</sup>	Motor HP <sup>3</sup>	Continuous Output Current <sup>4</sup> (Amps)	Output KVA <sup>5</sup>	Input Current (Amps)	Input KVA <sup>5</sup>	Dimensions <sup>6</sup> HxWxD
D4-0040xx-N1-CP	40	52	43	43	36	60x24x23
D4-0050xx-N1-CP	50	66	55	54	45	60x24x23
D4-0060xx-N1-CP	60	82	68	65	54	60x24x23
D4-0075xx-N1-CP	75	97	81	81	68	72x30x25
D4-0100xx-N1-CP	100	124	103	108	90	72x30x25
D4-0125xx-N1-CP	125	156	130	135	113	72x30x25
D4-0150xx-N1-CP	150	180	150	162	135	72x30x25
D4-0200xx-N1-CP	200	240	200	217	180	72x30x25
D4-0250xx-N1-CP	250	302	251	271	225	84x78x30
D4-0300xx-N1-CP	300	361	300	325	270	84x78x30
D4-0350xx-N1-CP	350	414	344	379	315	84x78x30
D4-0400xx-N1-CP	400	477	397	433	360	84x78x30
D4-0450xx-N1-CP	450	540	449	487	405	84x78x30
D4-0500xx-N1-CP	500	600	499	541	450	84x78x30
D4-0600xx-N1-CP	600	720	599	650	540	84x118x30
D4-0700xx-N1-CP	700	840	698	758	630	84x118x30
D4-0800xx-N1-CP	800	960	798	866	720	84x118x30

(1) Consult Factory for higher HP Drive Information and for 200-250VAC and 500-600VAC Drive Information.

(2) "xx" = CT for High Overload Capacity Drives, "xx" = VT for Normal Overload Capacity Drives.

(3) Horsepower rating is based on 460 VAC Motors.

(4) High Overload Capacity Drives produce 150% of Rated Drive Output Current for 1 minute; Normal Overload Capacity Drives produce 120% of Rated Drive Output Current for 1 minute.

(5) Output and Input KVA are calculated at 480VAC.

(6) All dimensions in inches.