



US Drives Inc.
2221 Niagara Falls Boulevard
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Tel: (716) 731-1606 Fax: (716) 731-1524
Visit us at www.usdrivesinc.com

Phoenix DX Sensorless AC Vector Drive



3 HP to 3500 HP

Standard Features:

- * *PRECISE CONTROL OF MOTOR SPEED AND TORQUE*
- * *EASY TO USE, SIMPLE SETUP*
- * *ENGLISH LANGUAGE DISPLAY - 2 LINE, 32 CHARACTER*
- * *50°C AMBIENT TEMPERATURE RATING*
- * *SHORT CIRCUIT AND GROUND FAULT PROTECTION*
- * *TOLERATES HIGH INPUT AC LINE VOLTAGES*
- * *BUILT IN LINE VOLTAGE SURGE PROTECTION*
- * *SPEED SENSITIVE MOTOR OVERLOAD PROTECTION, MEETS NEC 430*
- * *BUILT IN RFI NOISE FILTER*
- * *HIGH PERFORMANCE PID CONTROL*
- * *8 PRESET SPEEDS W/ ACCEL / DECEL CONTROL*
- * *BI-DIRECTIONAL FLYCATCHER (CATCH SPINNING MOTOR)*
- * *POWER DIP RIDE THROUGH*
- * *2 SECOND POWER DIP RIDE THROUGH*
- * *KW / KWH METERING*
- * *S CURVE ACCEL/DECEL CONTROL*
- * *PROGRAMMABLE THRESHOLD DETECTORS*
- * *MULTI FUNCTION I / O*
- * *CUSTOM V/Hz PROGRAMMING*
- * *AUTOLOGGING FAULT HISTORY*
- * *FIXED OR VARIABLE CARRIER FREQUENCY*
- * *AUTO RESTART*
- * *MUCH, MUCH, MORE*



THREE YEAR WARRANTY

MADE IN USA



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ENGINEERING SPECIFICATIONS

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 3276 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: 5 to 20% without modification. Braking modules available for added braking to 150%

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

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

ENVIRONMENTAL

Ambient Temperature: -10°C to 50°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/sec² (1.0G) peak.

Surge Protection Line Transients to 6000V
 IEEE C62.41-1991 Category B
 Showering Arc - 2000V Peak
 EN50082 - 1, 2

Noise Immunity: Standard on all models.

Input R.F.I Filter:

AVAILABLE OPTIONS

- Signal Conditioners/Isolators
- Communications Cards: RS-232/422/485, Modbus RTU, Metasys N2 & Others
- Analog Signal Conditioner/Isolation Cards
- Digital Input/Output Expansion/Conditioning Cards
- Hand/Off Auto, Local/Remote, Auto/Manual Selection
- Many Additional Modifications Available

PHYSICAL ATTRIBUTES

Mounting: Wall Mount: Through hole or panel mount.

Nema Rating: Type 1 (IP20) as Standard
 Type 12 (IP54) Optional
 Type 4 (IP65) Optional

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

Phoenix DX AC Drive Dimensions ¹								
Input Voltage	Motor HP ²		Nema 1 VFD Only	Nema 12 VFD Only	Nema 1 w Disconnect & Fuses	Nema 12 w Disconnect & Fuses	Nema 1 with Bypass	Nema 12 with Bypass
	High Overload Capacity ³ (CT)	Normal Overload Capacity ⁴ (VT)						
200 - 250 VAC (208/230/240)	3 - 7.5	5 - 10	13.05"x9.0"x10.9"	13.05"x9.0"x10.9"	20.74"x9.0"x10.9"	20.74"x9.0"x10.9"	34.02"x9.0"x10.9"	34.02"x9.0"x10.9"
	10 - 20	15 - 20	13.05"x9.0"x10.9"	13.05"x9.0"x10.9"	20.74"x9.0"x10.9"	20.74"x9.0"x10.9"	34.02"x9.0"x10.9"	34.02"x9.0"x10.9"
	25 - 30	25 - 30	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"	38.4"x11.6"x11.1"	38.4"x11.6"x11.1"
	40 - 100	40 - 100	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	65"x20.1"x13.5"	60"x36"x16"
380 - 500 VAC (380/400/415/480)	125 - 250	125 - 250	44.2"x31.1"x16.8"	72"x36"x23.5"	72"x31.5"x18"	72"x36"x23.5"	72"x72"x23.5"	72"x72"x23.5"
	5 - 15	7.5 - 20	13.05"x9.0"x10.9"	13.05"x9.0"x10.9"	20.74"x9.0"x10.9"	20.74"x9.0"x10.9"	34.02"x9.0"x10.9"	34.02"x9.0"x10.9"
	20 - 40	25 - 40	13.05"x9.0"x10.9"	13.05"x9.0"x10.9"	20.74"x9.0"x10.9"	20.74"x9.0"x10.9"	34.02"x9.0"x10.9"	34.02"x9.0"x10.9"
	50 - 60	50 - 60	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"	38.4"x11.6"x11.1"	38.4"x11.6"x11.1"
525 - 600 VAC (525/575/600)	75 - 200	75 - 200	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	65"x20.1"x13.5"	60"x36"x16"
	250 - 500	250 - 500	44.2"x31.1"x16.8"	72"x36"x23.5"	72"x31.5"x18"	72"x36"x23.5"	72"x72"x23.5"	72"x72"x23.5"
	5 - 15	7.5 - 20	13.05"x9.0"x10.9"	13.05"x9.0"x10.9"	20.74"x9.0"x10.9"	20.74"x9.0"x10.9"	24"x24"x14.2"	24"x24"x14.2"
	20 - 40	25 - 40	13.05"x9.0"x10.9"	13.05"x9.0"x10.9"	20.74"x9.0"x10.9"	20.74"x9.0"x10.9"	24"x30"x14.2"	24"x30"x14.2"
	50 - 75	50 - 75	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"	38.4"x11.6"x11.1"	38.4"x11.6"x11.1"
100 - 200	100 - 200	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	65"x20.1"x13.5"	60"x36"x16"	
250 - 600	250 - 600	44.2"x31.1"x16.8"	72"x36"x23.5"	72"x31.5"x18"	72"x36"x23.5"	72"x72"x23.5"	72"x72"x23.5"	

(1) All Dimensions in Inches (HxWxD)
 (2) Horsepower Rating based on 230, 460, and 575VAC Motors
 (3) High Overload Capacity Drives produce 150% of Rated Drive Output Current for 1 minutes
 (4) Normal Overload Capacity Drives produce 120% of Rated Drive Output Current for 1 minutes
 (5) Consult Factory for Higher HP Drive Dimensions