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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*
- * *MOTOR OVERLOAD PROTECTION, MEETS NEC 430*
- * *BUILT IN RFI NOISE FILTER*
- * *HIGH PERFORMANCE PID CONTROL*
- * *8 PRESET SPEEDS WITH ACCEL/DECEL CONTROL*
- * *BI-DIRECTIONAL FLYCATCHER (CATCH SPINNING MOTOR)*
- * *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



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.

CONTROL

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

Output Voltage: 0 to input 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
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 (typical) depending on load.

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

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

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

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.).

AVAILABLE OPTIONS

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

Phoenix DX AC Drive Dimensions¹

| 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 w Bypass | Nema 12 w 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" | 65"x20.1"x13.5" |
| | 125-250 | 125-250 | 44.2"x31.1"x16.8" | 72"x36"x23.5" | 86.5"x31.5"x18" | 72"x36"x23.5" | 72"x72"x23.5" | 72"x72"x23.5" |
| 380-500 VAC (380/400/415/480) | 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" |
| | 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" | 65"x20.1"x13.5" |
| | 250-500 | 250-500 | 44.2"x31.1"x16.8" | 72"x36"x23.5" | 86.5"x31.5"x18" | 72"x36"x23.5" | 72"x72"x23.5" | 72"x72"x23.5" |
| 525-600 VAC (525/572/600) | 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" | 65"x20.1"x13.5" |
| | 250-600 | 250-600 | 44.2"x31.1"x16.8" | 72"x36"x23.5" | 86.5"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 minute.

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

(5) Consult Factory for Higher HP Drive Dimensions.