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SINGLE PHASE Phoenix AC Drives 3 HP to 500 HP

Many locations only have Single Phase power available. Examples of applications at these sites include: agriculture (irrigation, pumping, loaders, and other machinery), oil and gas (pumping, water injection and extraction). Three Phase AC Drives have long been used on Single Phase power systems but with significant degradation of performance and with a host of reliability problems. One of the biggest problems with Single Phase input power is the stress it has on the DC Bus filtering capacitors and the input rectifier of an AC Drive which can lead to premature failure of these components. Other associated problems with Single Phase input power are nuisance tripping of the AC Drive with faults such as under-voltage and over-current that prevent the AC Drive from delivering maximum performance.

US Drives, Inc. has engineered a line of AC Drives specifically designed to overcome the problems with Single Phase input power. We are so comfortable with the design that we offer a Three Year Warranty on all our Drives.

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/DECCEL 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 (Single Phase).

Rated Input Frequency: 48 to 63Hz.

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 (Three Phase).

Output Frequency Range: 0 to 600Hz.

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.
- Hand/Off/Auto, Local/Remote, Auto/Manual Selection.
- Many Additional Modifications Available.

Input Voltage	Motor HP		Nema 1 VFD Only	Nema 12 VFD Only	Nema 1 w Disconnect & Fuses	Nema 12 w Disconnect & Fuses
	High Overload Capacity (HT)	Normal Overload Capacity (NT)				
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"
	10	15	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"
	15-40	20 - 50	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"	32.5"x20.1"x13.5"
	50-125	60 - 125	44"x31.1"x16.8"	72"x36"x23.5"	86.5"x31.5"x18"	72"x36"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"
	20-25	25 - 30	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"
	30-75	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"
	100 - 250	125 - 250	44"x31.1"x16.8"	72"x36"x23.5"	86.5"x31.5"x18"	72"x36"x23.5"
525 - 600 VAC (525/575/600)	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"
	20-25	25 - 30	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"	25"x11.6"x11.1"
	30-75	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"
	100 - 250	125 - 250	44"x31.1"x16.8"	72"x36"x23.5"	86.5"x31.5"x18"	72"x36"x23.5"

(1) All Dimensions in Inches (HxWxD)
 (2) Horsepower Rating based on 230, 480, 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