***US Drives Inc.***
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**Visit us at www.usdrivesinc.com**

# *ENGINEERING DATA*

## *SINGLE PHASE PHOENIX AC DRIVE*

## Electrical Specifications:

| | |
|---|---|
| Rated Input Voltage: | 300-750Vdc, 300-850Vdc |
| Frequency Tolerance: | 48-63 Hz |
| Number of Phases: | 3 |
| Displacement Power Factor: | .99 or greater at rated current |
| Efficiency: | 99% or greater at rated current |
| Max. Short Circuit Current Rating: | 200,000A rms symmetrical, 600 volts (when used with AC input line fuses specified in tables 1-1). |

## Control Specifications:

| | |
|---|---|
| Control Method: | Sine coded PWM<br>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.<br>Digital reference: 0.01% of max frequency. |
| Frequency resolution: | Analog reference: 0.06Hz at 60Hz.<br>Digital reference: 0.001Hz at 60Hz. |
| Current limit: | Proactive current limit programmable. |

## Environmental Specifications:

| | |
|---|---|
| Ambient Temperature: | -10°C to 50°C (14°F to 122°F) Nema type 1 enclosed. |
| Storage Temperature: | -40°C to 70°C (-40°F to 158°F) Nema type 1 enclosed. |
| Altitude: | Sea level to 3300 Feet [1000m] without derating. |
| Humidity: | 95% relative humidity non-condensing. |
| Vibration: | 9.8m/sec$^2$ (1.0G) peak. |
| Immunity: | IEEE C62.41-1991 Category B (Formerly known as IEEE 587)<br>EN50082-2 (Generic Immunity Standard).<br>With recommended MOV's. |
| Input R.F.I. Filter: | Standard on all models. |

## Physical attributes:

| | |
|---|---|
| Mounting: | Though hole or panel mount. |
| Nema Rating: | Type 1 (IP20) as standard, Type 12 (IP54) optional. |
| Construction: | Steel construction ( reduces E.M.I.) |

## Protective Features:

- Inverter overload protection to protect inverter.
- Peak output current monitoring to protect against line-to-line shorts and line-to-ground shorts.
- Ground fault monitoring.
- Heatsink over-temperature monitoring.
- AC line overvoltage protection.
- DC bus over-voltage protection.
- DC bus under-voltage protection.
- Internal power supply monitoring.
- AC power loss detection.

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- Password protection to prevent parameter changes by unauthorized personnel.
- Programmable thresholds and more.

## Control I/O:

- 8 Digital Inputs: 7 user programmable inputs and 1 dedicated input for "Stop", rated for 24Vdc logic control.
- 2 Digital Outputs: 2 programmable dry contacts rated 115Vac @ 5A; 30Vdc @ 3.5A.
- 2 analog inputs: -10 to +10V (10 bits) with input impedance: 75KΩ, or 4-20 mA @ 500Ω - Programmable.
- 2 analog outputs: -10 to +10V (10 bits) @ 2 mA max; output impedance = 100Ω. - Programmable.
- 1 voltage reference: +15Vdc reference @ 10 mA max.
- 24Vdc source: Use to power operator pushbuttons and US Drives option boards: 24Vdc @ 80 mA max.

## Standard Inverters Features:

- New generation IGBT.
- Nema type 1 (IP20) as standard for all models.
- 50°C ambient with standard Nema type 1 (IP20) enclosure.
- Modbus RTU serial communications ready.
- Built-in radio frequency filter.
- Nonvolatile parameter storage.
- All parameters are saved in EEPROM (nonvolatile).
- Autologging fault history: ten last faults recorded in order of occurrence.
- Internal control diagnostics.
- Simple programming through the Real-time Operator module (R.O.M.) with all data entries and monitoring in engineering units with English descriptions.
- Programmable "Total Inverter Run Time" accumulator.
- Parameter security code.
- 7 programmable digital inputs for custom setups.
- Metering: AC line voltage, output current, output voltage, DC Bus voltage, Kw, Kwh, running Kwh cost, and more…
- Programmable thresholds.
- Programmable maintenance timers.
- Programmable time delay and logic functions (AND, OR, NOR) of bit parameters, digital inputs and outputs.
- Adding, subtracting, multiplying, dividing, ramping, limiting, and/or filtering functions of parameters and analog inputs and outputs.
- Parameters can be displayed, routed to an analog/digital output, or re-routed and used as an input parameter to control another function within the inverter.
- User programmable functions and modes.
- Precise control of output frequency and voltage.