High Performance Multifunctional Inverters

FRENIC-MEGA Series
Fuji Electric’s FRENIC-MEGA drive series are high performance, multifunctional inverters providing the industry’s highest performance for three-phase motor applications. They offer expanded power ratings and flexible configurations that support 1/2 HP through 1000 HP. They are designed for 24/7 operation with embedded motor protection and critical maintenance functions.

Meeting the requirements for various applications, achieving lower maintenance, and improved protection to environmental conditions, as well as, the flexibility to meet the demands of both simple and complex industrial applications.

Improved control performance with available control methods: PG, sensorless, dynamic torque vector control; PG closed-loop control and V/f control. It also has good performance in current response, speed response and dual or triple selectable overload setting.

Versatile applications and functionality; expanded power ratings and is compliant with safety standards and RoHS Directives. It has a multifunction keypad with an optional USB port and a maintenance warning signal output.

### Performance

- **FRENIC-MEGA Series**
- High Performance Multifunctional Inverters

### Features

- **Control Inputs/Outputs**
  - Qty 9 Digital Inputs
  - Qty 2 Safety Inputs (Dedicated)
  - Qty 3 Analog Inputs
  - Qty 6 Digital Outputs; Qty 2 Relays (1 Form C & 1 Form A) & Qty 4 Transistor, 56 Selectable Functions
  - Qty 2 Analog Outputs; Selectable Type; 0 to 10VDC or 4 to 20mA Configurable to Provide Output Signal Proportional to 15 Different Functions
  - Qty 2 RS-485 Connections
  - RJ45 Keypad Port & Control Terminal Block Connections
  - 24Vdc Output Terminal rated 100mA
  - High Performance LED & LCD Keypad with NEMA/UL Type 4 Approved

- **Robust Design**
  - Nickel (Ni) & Tin (Sn) Plated Bus Bars
  - Cooling Fan Board Coating and Anti-Rust Protection
  - 10 Year Design Life of Cooling Fan and Capacitor with a Maintenance Alarm Signal

- **Flexibility**
  - Removable Control Terminal Block
  - PC Programming and Troubleshooting Software
  - Customizable Logic
  - 3 Option Card Ports Built-In
  - Heatsink to be mounted through the back of an enclosed design

- **Motor Control**
  - Multiple Power Rating
    - LD (Low Duty): 120% for 1 Min
    - MD (Medium Duty): 150% for 1 Min
    - HD (High Duty): 200% for 3s / 150% for 1 Min
  - High Performance Closed Loop Vector Control with Option Card
  - High Performance Sensor-less Vector Control
  - Built-in Braking Transistor Up to 40HP(LD)/30HP(HD)
  - Built-in Braking Resistor up to 15HP(LD)/10HP(HD)
  - Single Phase Input for All Models

- **Safety and Standard**
  - Safety Input Compliant with EN ISO13849-1, EN954-1, Category 3
  - UL 508C, CE
  - UL Premium Rating
  - NEMA/UL Type 1 by Option Kit
  - RoHS Directive Compliance

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3-Year Warranty

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**Dimensions**

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<th>Model Number and Weight</th>
<th>Dimensions (Inches)</th>
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**Options**

- **Fieldbus:**
  - EtherNet
  - CC-Link
  - DeviceNet
  - Profibus DP
  - Can Open

- **I/O Expansion:**
  - Keypad with USB Port
  - Relay Output
  - Digital Inputs and Outputs
  - Analog Inputs and Outputs
  - PG (Encoder) (5, 12, 15V)
  - PG Synchronization

- **Others:**
  - DC/AC Reactor
  - CE Filter
  - Braking Unit
  - Braking Resistor
  - NEMA/UL Type 1 Kit

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**Dimensions**

- **40Hp (LD) & BELOW**

- **50Hp (LD) & ABOVE**

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**40Hp (LD) & BELOW**

- **50Hp (LD) & ABOVE**
# Specifications

<table>
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<tr>
<th>Specifications</th>
<th>Details</th>
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| **Capacity (HP)**                 | 230V: 0.5 - 150HP (LD)  
                               0.5 - 124HP (HD)  
                               460V: 0.5 - 1000HP (LD)  
                               150 - 700HP (MD)  
                               0.5 - 900HP (HD) |
| **Overload Capability**           | LD (Low Duty): 120% 1min  
                               MD (Middle Duty): 150% 1min  
                               HD (High Duty): 150% 1mini, 200% 3s |
| **Input Power**                   | 230V Series: Single/Three Phase 200 to 240V, 50/60Hz  
                               460V Series: Single/Three phase 380 to 480V, 50/60Hz  
                               Voltage: +10% to -15% (unbalance 2% or less)  
                               Frequency: +5% to -5% |
| **Control**                       | V/F Control  
                               Dynamic Torque Vector Control  
                               Sensorless Vector Control  
                               Closed Loop Vector Control |
| **Output Voltage**                | 230V Series: Three Phase 200 to 240V (with AVR Function)  
                               460V Series: Three Phase 380 to 480V (with AVR Function) |
| **Output Frequency**              | V/F, Dynamic Torque Vector Control: 500Hz Maximum (HD), 120Hz (MD, LD)  
                               Sensorless Vector Control: 120Hz Maximum  
                               Closed Loop Vector Control: 200Hz Maximum |
| **Output Stability**              | Analog Setting: ±0.2% of Maximum Frequency  
                               Digital setting: ±0.01% of Maximum Frequency (by Keypad) |
| **Starting Torque (Open loop)**   | ≤ 30HP(HD): 200% at 0.3Hz  
                               ≥ 40HP(HD): 180% at 0.3Hz |
| **Braking Transistor**            | ≤ 30HP(HD), 40HP (LD): Built-in |
| **Braking Resistor**              | ≤ 10HP(HD), 15HP (LD): Built-in |
| **DC Reactor**                    | ≥ 75HP(LD), 100HP(HD): Comes with Drive (External) |
| **Ambient Temperature**           | -10 to 50°C (14 to 122°F) for Operation, -25 to 65°C (-13 to 149°F) for Storage |
| **Relative Humidity**             | 5 to 95% RH (without condensation) |
| **Installation Location**         | IEC60664-1 Pollution Degree 2  
                               (Free from Corrosive Gases, Flammable Gases, Oil Mist, Dust and Direct Sunlight)  
                               Indoor Use Only |
| **Altitude**                      | ≤ 3,300ft (1,000m) , 3,300ft (1,000m) to 9,900ft (3,000m) with Derating |
| **Enclosure**                     | UL Open Type, NEMA/UL Type 1 by Option Kit |
| **Safety**                        | EN ISO13849-1, EN954-1, Category 3 |
| **Standard**                      | UL, cUL: UL508C, C22.2 No. 14, EN61800-5:2007  
                               CE: EN61800-5-1  
                               RoHS: 2002/95/EC |