FUJI DRIVES & AUTOMATION
A HIGHLY EFFICIENT AND EFFECTIVE GLOBAL AUTOMATION
WITH THE FUNCTION AND CAPABILITIES FOR ALL YOUR NEEDS

Solutions For Cranes

FEI/DP/CRANE/015/RO
Fuji Inverters provides an easy & economic solution with its full range of inverters for Crane and Hoist application. It is not only for hoisting but also for traveling movements with both open loop and close loop configuration. Its proven motor control with other valuable features like brake control, over load detection, automatic regeneration control etc ensures the safety of the system.

- 200% Starting Torque and 200% Overload secures reliable movement also under heavy load conditions
- 100% torque at zero speed* for brake operation during stand still increases brake life time and softens the movement
- Built-in customizable logic functions with a maximum of 200 steps giving customers the ability to customize their inverters.
- Excellent speed control without vibration using dynamic torque vector control method in both open loop & close loop.
- Inbuilt mechanical brake control with reference to output current, frequency, torque & timer with Brake feedback signal monitoring
- Master follower operation enables synchronous operation of two motors equipped with a pulse generator.
- STO functional safety functions are available as a standard. Therefore output motor contactors are not required for safe stop implementation
- Positioning control with pulse counter*
- Droop control to adjust the speed of each motor individually to balance their load torque.
- Built in over load / overweight detection and over travel limit prevent dangerous operation states
- Automatic load sharing between multiple drives for long and cross travel.
- Superior flexibility with all type of communication helps to achieve special function like Anti-sway control, Trolley synchronization (Tandem operation) etc. with help of communication with PLC.
- Multifunction keypad enhances the HMI functionality & UCB keypad allows efficient operation by connecting it with Laptop or PC.
Operation time chart under vector control with speed sensor

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**Note:** If the zero speed control is enabled under vector control, set J95 (Brake - OFF torque) at 0% After releasing the brake (BRKS ON), operating for a while, and then activating the brake (BRKS OFF) to stop the motor, if you to release the brake (BRKS ON), turn the inverter’s run command OFF and then ON.

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**Universal features:**

<table>
<thead>
<tr>
<th>Long life Design</th>
<th>200% starting torque with 200% Overload capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1.png" alt="Image" /></td>
<td><img src="image2.png" alt="Image" /></td>
</tr>
<tr>
<td>Utilize Regenerative energy with PWM converter</td>
<td>Global compliance</td>
</tr>
<tr>
<td><img src="image3.png" alt="Image" /></td>
<td><img src="image4.png" alt="Image" /></td>
</tr>
</tbody>
</table>
**Frenic -MEGA**
- Greater performance multifunctional inverter
- Available in two mode (Rating: HD & LD)
- Available from 0.4 kW to 630kW (3-phase, 400V)
- Overload: 200% for 3 sec & 150% for 60 sec
- Improved reaction to fluctuation of impact load
- Various functions that accommodate wide range of application.

**Frenic -ACE**
- High performance compact inverter
- Available in Quadruple Rating (ND, HD, HND, HHD)
- Available from 0.4 kW to 220 kW (3-phase, 400V)
- Overload: 200% for 0.5 sec & 150% for 60 sec
- 2-channel on-board RS485 communications port
- Customizable logic up to 200 steps

**Frenic-RHC (PWM Converter)**
- Braking resistor is not required
- Regenerative power can be effectively used for electric power of another equipment.
- Approximately 40% energy can be saved.
- Energetically efficient. (Equal or more than 97%)
- Wide range of capacities.
  - 200V series: 7.5kW to 90kW (11 models)
  - 400V series: 7.5kW to 800kW (22 models)
- Low harmonic distortion (Under 5%) with improved power factor (1 or -1).
- Variety of protection and maintenance function.
Frenic -VG

- Dedicated design for panel installation (stack type)
- Improved control performance
- Overload: 200% for 3 sec & 150% for 60 sec
- Line-up features unit type and stack type, facilitating easy construction of large-capacity systems.
- Stack type offers maximum capacity of up to 2200kW with direct parallel connection.
- Special functions for cranes
  - Flux forcing function
  - Load adaptive control
  - Braking control signal

### 400V series

<table>
<thead>
<tr>
<th>Type</th>
<th>Series name</th>
<th>Product introduction</th>
<th>Form</th>
<th>Nominal applied motor [kW]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unit</td>
<td>Inverter (FRENIC-VG)</td>
<td>This type consists of the converter and inverter circuits. The inverter can be operated using a commercial power supply.</td>
<td>Standard unit</td>
<td>3.7kW 630kW 1800kW 3700kW</td>
</tr>
<tr>
<td></td>
<td>PWM Converter (RHC-C)</td>
<td>This converter is used where electric power regeneration or harmonic control is required. Peripheral devices are separately required.</td>
<td>Standard unit</td>
<td>7.5kW 630kW 1800kW 3700kW</td>
</tr>
<tr>
<td>Stack</td>
<td>Inverter (FRENIC-VG)</td>
<td>The converter and inverter sections are separate units in this type. The diode converter (stack) or PWM converter is selected depending on the intended use.</td>
<td>Standard stack</td>
<td>30kW 315kW 800kW 1200kW 2400kW 3200kW 4800kW</td>
</tr>
<tr>
<td></td>
<td>PWM Converter (RHC-D)</td>
<td>This converter is used where electric power regeneration or harmonic control is required. Peripheral devices are separately required.</td>
<td>Standard stack</td>
<td>132kW 315kW 800kW 1800kW 3700kW</td>
</tr>
<tr>
<td></td>
<td>Filter stack (RHF)</td>
<td>This is a dedicated filter for the PWM converter (RHC-D).</td>
<td>Standard stack</td>
<td>160kW 355kW</td>
</tr>
<tr>
<td></td>
<td>Diode rectifier (RHD-D)</td>
<td>This converter is used where no electric power regeneration is required. Built-in DC Reactor as standard.</td>
<td>Standard stack</td>
<td>200kW 315kW 1370kW</td>
</tr>
</tbody>
</table>

*Unit type: Having a standard built-in brake circuit (with 160kW or below). *Standard stack: Can be used by one set. Stack by phase: One set of the inverter consists of three stacks. *Combination of inverters can be used with one converter (PWM converter, Diode rectifier). *Inverter DC power can also be supplied without using the converter circuit. *Refer to the 6,7 page for the capacity expansion method.

### Programmable Logic controller (PLC)

- Built-in 32-bit high performance processor
- Various motion control realized with function blocks
- High speed processing
- Controller complying with international standards
- N: 1 Redendancy
- 3 types of tasks
- Compatible to 25mpbs serial bus (SX bus)
- Suitable Functions for Crane Applications.
Fuji Electric's HMI provide exceptional features, including connectivity to popular PLCs including over 20 Ethernet drivers & 8 field bus options.

- Available from 7” to 15”
- Compatibility with the mobile tablet
- “Advanced information utilization” with network technology.
- High-speed performance & improved operability
- Built in wireless (monitor & control on mobile tablet)
- Zoom in & out with two fingers

**Key Customers**
- COFMOW
- BHEL
- Mukand Cranes
- Anupam Industries
- Electromech
- Unicon Cranes
- CHPL
- Carry More Cranes
- Reeva Cranes
- MICA Machinery