Inverter Application Software...

With years of experience in crane applications we use the standard built-in functions of Omron’s inverters including ELS (Electronic Line Shaft), brake control and positioning functionality, in combination with application functions such as anti-skew, over-travel control and load speed optimisation. As a result we have created the Crane Inverter Application Software. Depending on the crane type and particular needs, different functions can be added to create new dedicated inverter application software versions.

**Anti-skew function**
- Using external sensors, the inverter ensures the crane operates perfectly in its horizontal alignment.

**Over-travel management**
- The inverter manages signals from the limit switch about each operation and actuates accordingly; reducing the crane car’s speed before stopping.
Overload control
- The drive controls the load ensuring it is not too heavy for the crane. If excessive weight is detected, an alarm is activated and the operation is automatically stopped.

Brake control
- The drive has fully integrated brake control and adjustment parameters to give very smooth starts and stops. A brake release feedback alarm has also been added.

Levelling control
- A critical crane feature is the synchronisation of the motors which ensures a balanced load. This is achieved with the RX’s standard built-in ELS (Electronic Line Shaft) function.
...for Crane Solutions

The Omron Crane Inverter Application Software Library has been developed using different function and solution combinations for most standard crane types – Gantry, Tower, Luffing and Grab. Additionally, CX-Drive Programming enables existing functions to be adapted to customers’ needs, and new functions can also be created resulting in exclusive, tailor-made solutions. Customers can also develop their own application software with the CX-Drive Programming open tool.

Load over speed control

- An external encoder directly connected to the rope axis provides the inverter with redundancy information ensuring perfect load speed control.

Joystick control and specific alarms

- Joystick control and new alarms dedicated to specific crane malfunctions ensure full control of the crane.

TOWER CRANES

- Speed load control.
**Speed Optimisation**

- Load Speed Optimisation facilitates a vital crane function; speeds can be adjusted according to each load, reducing job times.

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**APPLICATION SOFTWARE LIBRARIES**

Benefit from using Omron’s Inverter Application Software Library which provides solutions for cranes, winders, positioning, water and energy as well as other areas which will be launched in the future. Omron’s inverter application software can be customised to meet specific customer needs...

...or just create your ones by using the CX-Drive Programming tool included in the standard CX-Drive software, which features:

- Flow chart and text editor programming languages.
- 5 tasks running simultaneously with up to 1000 lines per program.
- Full access to parameters and inverter functions.
- Access to an LCD real time clock.
RX Inverter

- Power range up to 132 kW
- Sensor-less and closed-loop vector control
- High starting torque in open loop (200% at 0.3 Hz)
- Full torque at 0 Hz in closed-loop
- Double rating VT 120%/1 min and CT 150%/1 min
- Built-in application functionality: ELS (Electronic Line Shaft), brake control, load over speed control

### 200 V class

<table>
<thead>
<tr>
<th>Three-phase: 3G3RX</th>
<th>A2004</th>
<th>A2007</th>
<th>A2205</th>
<th>A3022</th>
<th>A4022</th>
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<td>at CT</td>
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<td>0.75</td>
<td>1.0</td>
<td>1.3</td>
<td>1.7</td>
<td>2.0</td>
<td>2.3</td>
<td>2.7</td>
<td>3.2</td>
<td>3.7</td>
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<td>5.0</td>
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<td>9.4</td>
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<td>at VT</td>
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<td>1.5</td>
<td>2.2</td>
<td>3.7</td>
<td>5.5</td>
<td>8</td>
<td>11</td>
<td>15</td>
<td>18.5</td>
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### 400 V class

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<th>A4205</th>
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<th>A30025</th>
<th>A35025</th>
<th>A40025</th>
<th>A45025</th>
<th>A50025</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. applicable motor 4P kW</td>
<td>at CT</td>
<td>1.0</td>
<td>1.7</td>
<td>2.5</td>
<td>3.6</td>
<td>5.0</td>
<td>7.5</td>
<td>11</td>
<td>15</td>
<td>18.5</td>
<td>22</td>
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<td>63</td>
<td>95</td>
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<td>170</td>
<td>217</td>
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<td>at VT</td>
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<td>1.5</td>
<td>2.2</td>
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<td>95</td>
<td>132</td>
<td>170</td>
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<td>270</td>
</tr>
</tbody>
</table>

### Software

- CX-Drive with Drive Programming functionality.

### Application Libraries

- **Crane**
  - Tower
  - Luffing
  - Grab
  - Gantry

- **Winder**
  - Torque Control
  - PID Control

- **Water**
  - Pump Seq

- **Positioning**
  - Extra Positioning

*Selection guide: KPP_RX_EN_INT

*Note: Please contact your OMRON representative for detailed specifications and ordering information.*
MX2 Inverter

- Power range up to 15 kW
- Torque control in open loop
- 200% starting torque (at 0.5 Hz)
- Double rating VT 120%/1 min and CT 150%/1 min
- Models with IP54 housing protection
- 24 VDC backup supply for control board and communication
- Built-in application functionality (i.e. Brake control)

### Software

- CX-Drive with Drive Programming functionality.

### APPLICATION LIBRARIES

- **Winder**
- **Water**
- **Hoist & Lift**
- **Textile**
- **Energy**

### Selection guide: KPP_MX2_EN_INT

#### 200 V class

<table>
<thead>
<tr>
<th>Motor kW</th>
<th>Inverter capacity kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>For VT setting</td>
<td>0.2</td>
</tr>
<tr>
<td>For CT setting</td>
<td>0.2</td>
</tr>
<tr>
<td>200 VT</td>
<td>0.4</td>
</tr>
<tr>
<td>200 CT</td>
<td>0.2</td>
</tr>
<tr>
<td>240 VT</td>
<td>0.4</td>
</tr>
<tr>
<td>240 CT</td>
<td>0.3</td>
</tr>
<tr>
<td>Rated output current (A) at VT</td>
<td>1.2</td>
</tr>
<tr>
<td>Rated output current (A) at CT</td>
<td>1.0</td>
</tr>
</tbody>
</table>

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<td>For CT setting</td>
<td>0.4</td>
</tr>
<tr>
<td>380 VT</td>
<td>1.3</td>
</tr>
<tr>
<td>380 CT</td>
<td>1.1</td>
</tr>
<tr>
<td>480 VT</td>
<td>1.7</td>
</tr>
<tr>
<td>480 CT</td>
<td>1.4</td>
</tr>
<tr>
<td>Rated output current (A) at VT</td>
<td>2.1</td>
</tr>
<tr>
<td>Rated output current (A) at CT</td>
<td>1.8</td>
</tr>
</tbody>
</table>

Selection guide: KPP_MX2_EN_INT

*Note: Please contact your OMRON representative for detailed specifications and ordering information.
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Automation Systems
- Programmable logic controllers (PLC)  
- Human machine interfaces (HMI)  
- Remote I/O  
- Industrial PC’s  
- Software

Motion & Drives
- Motion controllers  
- Servo systems  
- Inverters  
- Robots

Control Components
- Temperature controllers  
- Power supplies  
- Timers  
- Counters  
- Programmable relays  
- Digital panel indicators  
- Electromechanical relays  
- Monitoring products  
- Solid-state relays  
- Limit switches  
- Pushbutton switches  
- Low voltage switch gear

Sensing & Safety
- Photoelectric sensors  
- Inductive sensors  
- Capacitive & pressure sensors  
- Cable connectors  
- Displacement & width-measuring sensors  
- Vision systems  
- Safety networks  
- Safety sensors  
- Safety units/relay units  
- Safety door/guard lock switches

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