User-Friendly Software and Hardware Solutions

Software PLC (Standard)
• Built-in software PLC is fully programmable to communicate with other robots, machines and peripheral equipment, as well as manage internal robot operations.
• Hundreds of included functions allow Nachi PLC to perform complex tasks and replace external PLC devices, which control entire work cells without added hardware.

OpenMPI-FF (Optional)
• OpenMPI-FF is a C++ library which allows external PC-based control of a Nachi robot. This allows user to control single Nachi FCD or FD robots using common devices, such as industrial control software, cameras, joy sticks and numerous other commands, including strings. Additional functionality includes robot operation and monitoring, as well as real-time communication and traceability.

FD on Desk Robot Simulator (Optional)
• Nachi’s proprietary robot simulation software tool, which can run on a laptop or desktop computers.
• Simulates all critical components of the Nachi FD robot control platform and provides a 3D environment for creating accurate and realistic-looking work cells.
• There’s a wide variety of uses, including: offline programming, application setup, personnel training, problem diagnosis and engineering (reach and cycle time verification).
• Use CAD drawings to simplify creation of complex paths with CAD-to-Path utility.

OpenNR-IF (Optional)
• OpenNR is a C++ library which allows external PC-based control of a Nachi robot. This allows a user to easily interface Nachi FD or CFD robot controllers to devices, such as: industrial control software, cameras, joy sticks and sensors for custom manufacturing solutions. Additional functionality includes robot operation and monitoring, as well as real-time communication and traceability.

CZ10 Force Control Functions (Optional)
• Allows Nachi robots to apply constant force along a contoured path.
• Uses “feel” to insert parts with tight tolerances.
• Trace or match angled surfaces for assembly.

Integrated Vision (Optional)
• NV-PRO VISION SYSTEM
  • Supports 2D, 3D and laser vision technologies, while offering high-speed image capture and measurements.
  • Expandable up to four cameras on a single system for maximum flexibility.
  • Supports coaxial synchronisation (line tracking) technology for simple/high-speed handling capability.
  • A fully integrated vision solution with image display on teach pendant for simplified setup and operation.
  • Ethernet socket communication and user-task functions allow the robot to communicate with third-party vision systems.

• NV-PRO EX — 3D SURFACE MATCHING VISION SYSTEM
  • Uses advanced dot cloud projection technology to match surface contour images to known CAD or library image part geometry.
  • Using Nachi NV-Pro EX dot cloud vision technology, components lacking easily identifiable features, such as holes or defined edges, can be inspected directly upon arrival or occurrence and picked from broad category unmatched parts. Whole vision works in cycle time, as multiple parts queue from single image process sequence.

Advanced Process Technologies

Fence Control Functions
• Allows motor to apply constant force along a contoured path.
• Uses “feel” to insert parts with tight tolerances.
• Trace or match angled surfaces for assembly.

Collaborative Robot Technologies (Optional)
• Mode #1: Safety-Rated Monitored Stop
  • The robot can be stopped in a safe position allowing the operator to load, unload or add parts, as well as perform other tasks without shutting off robot power.

• Mode #2: Direct Teach
  • Allows user to “hand guide” robot for programming and to modify taught paths.

• Mode #3: Speed and Separation Monitoring
  • Safety-rated sensors detect human presence, speed of robot is limited proportionally to the distance between robot and human.

• Mode #4: Force and Torque Limiting
  • Performing a risk assessment and limiting robot force enables humans to work side-by-side with robots without fear of harm. If robot contacts a human or other object, it will stop upon contact, without causing injury or damage.

www.nachirobotics.com
### FD Smart Teach Pendant

- **Safety Technology**
- **24-Hour Service and Support**

### SRA-H Series (Hollow Arm Robots)

<table>
<thead>
<tr>
<th>Model</th>
<th>Reach (mm)</th>
<th>Payload (kg)</th>
<th>Axes</th>
<th>Repeatability (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRA133HL</td>
<td>2654</td>
<td>±0.1mm</td>
<td>6</td>
<td>±0.02mm</td>
</tr>
<tr>
<td>SRA100J</td>
<td>2654</td>
<td>±0.1mm</td>
<td>6</td>
<td>±0.02mm</td>
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<tr>
<td>SRA 57(P)</td>
<td>2654</td>
<td>±0.1mm</td>
<td>6</td>
<td>±0.02mm</td>
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<tr>
<td>SRA166</td>
<td>2654</td>
<td>±0.1mm</td>
<td>6</td>
<td>±0.02mm</td>
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</table>

### LP Series (Palletizing Robots)

<table>
<thead>
<tr>
<th>Model</th>
<th>Reach (mm)</th>
<th>Payload (kg)</th>
<th>Axes</th>
<th>Repeatability (mm)</th>
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<tbody>
<tr>
<td>LP180</td>
<td>3972</td>
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<td>±0.05mm</td>
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<tr>
<td>LP130F</td>
<td>3972</td>
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<td>±0.08mm</td>
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</table>

### MC Series (Medium Payload Robots)

<table>
<thead>
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<th>Model</th>
<th>Reach (mm)</th>
<th>Payload (kg)</th>
<th>Axes</th>
<th>Repeatability (mm)</th>
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</thead>
<tbody>
<tr>
<td>MC280L</td>
<td>2771</td>
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<td>MC350</td>
<td>2771</td>
<td>±0.15mm</td>
<td>6</td>
<td>±0.1mm</td>
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</table>

### MR Series (Flexible 7-Axis Robots)

<table>
<thead>
<tr>
<th>Model</th>
<th>Reach (mm)</th>
<th>Payload (kg)</th>
<th>Axes</th>
<th>Repeatability (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR107L</td>
<td>2000</td>
<td>±0.1mm</td>
<td>7</td>
<td>±0.01mm</td>
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</table>

### Robot Controller Models

<table>
<thead>
<tr>
<th>Model</th>
<th>Reach (mm)</th>
<th>Payload (kg)</th>
<th>Axes</th>
<th>Repeatability (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>PDR Controller</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PDM Controller</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPD Controller</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CEE Controller</td>
<td></td>
<td></td>
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### EZ Series (SCARA Robots)

<table>
<thead>
<tr>
<th>Model</th>
<th>Reach (mm)</th>
<th>Payload (kg)</th>
<th>Axes</th>
<th>Repeatability (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EZ500</td>
<td>2901.5</td>
<td>±0.3mm</td>
<td>3</td>
<td>±0.15mm</td>
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<td>EZ600</td>
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<td>±0.2mm</td>
<td>3</td>
<td>±0.12mm</td>
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</tbody>
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**Robot Controller Models**

- **PDR Controller**
- **PDM Controller**
- **CPD Controller**
- **CEE Controller**

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**FD Smart Teach Pendant**

- **Multi-Color Touch Screen**
- **Regenerative / Customizable**
- **Full Fanuc® Included / User Help Function**

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**CFD Controller**

- **AC Motor With 3-Phase 240V**
- **Dimension**: Width: 90mm x Height: 157mm (max)

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**CE Controller**

- **AC Motor With 3-Phase 240V**
- **Dimension**: Width: 90mm x Height: 173mm (max)

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**MR107L**

- **Repeatability**: ±0.015mm

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**EZ500**

- **Motion Range (mm)**: 2901.5 x 369W

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**EZ600**

- **Motion Range (mm)**: 2901.5 x 490W