Industrial robot controller
MOTOMAN-NX100
High performance controller NX100 for all MOTOMAN-Robots

Multi-Robot-Synchronization function
Real time synchronization of up to four robots and external axes (max. 36 axes)
- Jigless working possible
- Enables high density robot layouts
- Reduced cycle time

Advanced-Robot-Motion function (ARM)
Dynamic calculation of robot axis torque and load
- High performance path accuracy
- Optimized robot motion and speed
- Vibration control
- Highly sensitive collision detection

Communication features
Built-in Ethernet, Web (ftp, opc) server options and fieldbus support of the 15 most common brands on the market
- Easy to connect to existing networks
- Remote monitoring and diagnosis of robot systems

Further features
- Multitasking
- Internal SPS
- High performance by industrial PC
- Boot time max. 40 sec
- MTTR (Mean Time To Repair): < 5 min.
- Automatic zero calibration

Programming pendant (PHG)
ergonomical, light and easy
- 6.5” LCD color display
- Touch screen
- Windows operating system

- Operation keys
  - start/stop
  - emergency off

- Cursor key

- Flash card slot

- Display can be individually set for each application

- 3 position dead man switch (Rear side not visible)

- Operation keys
  - start/stop
  - emergency off

- Display can be individually set for each application

- 3 position dead man switch (Rear side not visible)

- Easy and fast programming
- Several user levels – from operation to maintenance
- Help function
## Control cabinet

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td>800 (W) x 1000 (H) x 650 (D)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>Approx. 170 kg</td>
</tr>
<tr>
<td><strong>Protection class</strong></td>
<td>IP54</td>
</tr>
<tr>
<td><strong>Cooling system</strong></td>
<td>Indirect cooling</td>
</tr>
<tr>
<td><strong>Ambient temperature</strong></td>
<td>0° to +45°C (operation) -10° to +60°C (transport and storage)</td>
</tr>
<tr>
<td><strong>Relative humidity</strong></td>
<td>Max. 90% non-condensing</td>
</tr>
<tr>
<td><strong>Power supply</strong></td>
<td>3-phase 400/415/440 VAC at 50/60 Hz</td>
</tr>
<tr>
<td><strong>Digital I/O</strong></td>
<td>40 inputs/40 outputs (standard) (Expandable to 1024 inputs/1024 outputs)</td>
</tr>
<tr>
<td><strong>Analogue in/outputs</strong></td>
<td>40 channels (optional)</td>
</tr>
<tr>
<td><strong>Positioning system</strong></td>
<td>Absolute encoder / serial interface</td>
</tr>
<tr>
<td><strong>Program memory</strong></td>
<td>60,000 steps, 10,000 instructions and 10,000 PLC steps</td>
</tr>
<tr>
<td><strong>Interface</strong></td>
<td>RS-232C, Ethernet</td>
</tr>
</tbody>
</table>

## Maintenance

### Functions
- System monitor, internal maintenance clocks (e.g. Servo power-on time)
- Self-diagnosis: Classifies errors and major/minor alarms and displays the data
- User alarm display: Alarm messages for peripheral devices
- Alarm display: Alarm messages and alarm history
- I/O diagnosis: Simulated enable/disable outputs
- TCP calibration: Automatic calibration of TCP (Tool Center Point)

## Programming pendant

<table>
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<tr>
<th>Feature</th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Dimensions</strong></td>
<td>200 (W) x 340 (H) x 60 (D)</td>
</tr>
<tr>
<td><strong>Touchscreen display</strong></td>
<td>6.5&quot; colour LCD (640x480 pixels)</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>1.3 kg</td>
</tr>
<tr>
<td><strong>Coordinate system</strong></td>
<td>Joint, Rectangular/cylindrical, Tool, User-coordinates</td>
</tr>
<tr>
<td><strong>Speed adjustment</strong></td>
<td>Fine adjustment possible during operation or teach mode</td>
</tr>
<tr>
<td><strong>Shortcuts</strong></td>
<td>Direct access keys and user selectable screen keys possible</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>Mostly spoken languages available (worldwide)</td>
</tr>
<tr>
<td><strong>Interface</strong></td>
<td>Compact Flash card slot</td>
</tr>
<tr>
<td><strong>Operating system</strong></td>
<td>Windows CE</td>
</tr>
</tbody>
</table>

## Safety features

### Specifications
- Dual-channel safety system (Emergency stop, safety interlock), European safety standard (ISO10218)
- Collision avoidance zones and radial interference zones
- Collision detection: Monitors robot axes’ torque levels
- Machine lock: Test-run peripheral device without robot motion possible

## Programming

### Programming language
- INFORM III

### Robot motion control
- Joint motion, linear, circular, spline interpolation

### Speed adjustment
- Joint motion (% of maximum)
- Interpolation (mm/sec; cm/min; inch/min)
- Angular velocity (°/sec)

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*Technical data may be subject to change without previous notice, NX100, H-05-2010*