Slim, Dual-Arm Robot with “Human-Like” Flexibility

- Powerful actuator-based design provides “human-like” flexibility and fast acceleration.
- Superior dexterity and best-in-class wrist characteristics make slim, dual-arm robot ideally suited for assembly, part transfer, machine tending, packaging and other handling tasks that formerly could only be done by people.
- Highly flexible; 15 axes of motion (7 axes per arm, plus a single axis for base rotation).
- Internally routed cables and hoses (6 - air, 12 - electric) reduce interference and maintenance, and also make programming easier.
- 5 kg (11 lb) payload per arm; 845 mm (33.3") horizontal reach per arm; 1,118 mm (44") vertical reach per arm; ±0.06 mm (±0.003") repeatability.
- Both robot arms can work together on one task to double the payload or handle heavy, unwieldy objects. Two manipulators can perform simultaneous independent operations.

Payload: 5 kg/arm

- Ability to hold part with one arm while performing operations on it with other arm. Can transfer a part from one arm to the other with no need to set part down.

DX100 Controller

- Patented multiple robot control supports up to 8 robots/72 axes.
- Windows® CE programming pendant with color touch screen and USB interface.
- Faster processing speeds for smoother interpolation. Quicker I/O response. Accelerated Ethernet communication.
- Extensive I/O suite includes integral PLC and touch screen HMI, 2,048 I/O and graphical ladder editor.
- Supports all major fieldbus networks, including EtherNet/IP, DeviceNet, Profinet and many others.
- Compliant to ANSI/RIA R15.06-1999 and other relevant ISO and CSA safety standards. Optional Category 3 functional safety unit.

TOP REASONS TO BUY

- Dexterity to perform complex tasks; dual 7-axis arms work together or independently
- Slim design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces
- Simplified tooling reduces cost
- Can be used in environments that are hazardous to humans
- Labor savings justifies capital investment
**SDA5D ROBOT**

**SDA5D SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Structure</th>
<th>Articulated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting</td>
<td>Floor</td>
</tr>
<tr>
<td>Controlled Axes</td>
<td>15 (7 axes per arm plus base rotation)</td>
</tr>
<tr>
<td>Payload</td>
<td>5 kg (11 lbs/arm)</td>
</tr>
<tr>
<td>Horizontal Reach per Arm</td>
<td>945 mm (33.3&quot;)</td>
</tr>
<tr>
<td>Horizontal Reach (P-point to P-point)</td>
<td>1,690 mm (66.5&quot;)</td>
</tr>
<tr>
<td>Vertical Reach</td>
<td>1,118 mm (44&quot;)</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.06 mm (±0.003&quot;)</td>
</tr>
</tbody>
</table>

**Maximum Motion Range**

- Rotation-Axis (Waist): ±170°
- S-Axis (Lifting): ±110°
- L-Axis (Lower Arm): ±110°
- E-Axis (Elbow): ±170°
- U-Axis (Upper Arm): +115° / -90°
- R-Axis (Upper Arm Twist): ±180°
- B-Axis (Wrist Pitch/Yaw): ±110° / ±180°
- T-Axis (Wrist Twist): ±180°

**Maximum Speed**

- Rotation-Axis: 200% s⁻¹
- S-Axis: 200% s⁻¹
- L-Axis: 200% s⁻¹
- E-Axis: 200% s⁻¹
- U-Axis: 200% s⁻¹
- R-Axis: 200% s⁻¹
- B-Axis: 200% s⁻¹
- T-Axis: 350% s⁻¹

**Approximate Mass**

- 110 kg (242.6 lbs)

**Power Consumption**

- 1.4 kVA

**Allowable Moment**

- R-Axis: 14.7 N·m
- B-Axis: 14.7 N·m
- T-Axis: 7.35 N·m

**Allowable Moment of Inertia**

- R-Axis: 0.45 kg·m²
- B-Axis: 0.45 kg·m²
- T-Axis: 0.11 kg·m²

**DX100 CONTROLLER SPECIFICATIONS**

<table>
<thead>
<tr>
<th>Dimensions (mm)</th>
<th>1,200 (w) x 1,000 (h) x 850 (d) 47.2&quot; x 39.4&quot; x 25.6&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approximate Mass</td>
<td>250 kg max. (551.3 lbs)</td>
</tr>
<tr>
<td>Cooling System</td>
<td>Indirect cooling</td>
</tr>
<tr>
<td>Ambient Temperature</td>
<td>During operation: 0° to 45° C (32° to 113° F)</td>
</tr>
<tr>
<td>Relative Humidity</td>
<td>90% max. non-condensing</td>
</tr>
<tr>
<td>Primary Power Requirements</td>
<td>3-phase, 240/480/575 VAC at 50/60 Hz</td>
</tr>
<tr>
<td>Digital I0</td>
<td>Standard I0: 40 inputs/40 outputs consisting of 16 system inputs/16 system outputs, 24 user inputs/24 user outputs, 32 Translator Outputs, 8 Relay Outputs, Max. I0 (optional): 2,048 inputs and 2,048 outputs</td>
</tr>
<tr>
<td>Program Memory</td>
<td>JOB: 200,000 steps, 10,000 instructions, CIO Ladder Standard: 15,000 steps Expanded: 20,000 steps</td>
</tr>
<tr>
<td>RVH Weight</td>
<td>.998 kg (2.2 lbs)</td>
</tr>
<tr>
<td>Interface</td>
<td>One Compact Flash slot, One USB Port (1.1)</td>
</tr>
<tr>
<td>Pendant Dim. (mm)</td>
<td>169 (w) x 314.5 (h) x 50 (d) (6.7&quot; x 12.4&quot; x 2&quot;)</td>
</tr>
<tr>
<td>Number of Robots/Axes</td>
<td>Up to 6 robots, 72 axes</td>
</tr>
<tr>
<td>Multi Tasking</td>
<td>Up to 16 concurrent jobs, 4 system jobs</td>
</tr>
<tr>
<td>Fieldbus</td>
<td>DeviceNet Master/Slave, AB RIO, Profibus, Interbus-S, M-Net, CC Link, EtherNet IP/Slave</td>
</tr>
<tr>
<td>Ethernet</td>
<td>10 Base T/100 Base TX</td>
</tr>
</tbody>
</table>

**CONNECTIONS**

- 2X AIR HOSE Ø4 OUTSIDE Ø2.5 INSIDE
- PREPARE SOCKET CONNECTOR: LF10WBP-12S (HIROSE) LF10WBRB-12P (PIN CONNECTOR)(2 CONNECTORS)
- CONNECTORS FOR INTERNAL USER I/O WIRING HARNESS: AIR-3 (RED), AIR-4 (BLUE)

**VIEW C**

- 4X AIR INLET Ø4 OUTSIDE Ø2.5 INSIDE (WITH PLUG)
- 2X VIEW A-A
- 2X VIEW A-A

**VIEW B**

- CONNECTORS FOR INTERNAL USER I/O WIRING HARNESS: LF10WBP-12S (HIROSE)

**VIEW A**

- PREPARE SOCKET CONNECTOR: LF10WBP-12S (HIROSE)
- CONNECTORS FOR INTERNAL USER I/O WIRING HARNESS: AIR-3 (RED), AIR-4 (BLUE)

**TECHNICAL SPECIFICATIONS SUBJECT TO CHANGE WITHOUT NOTICE**

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**www.motoman.com**

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