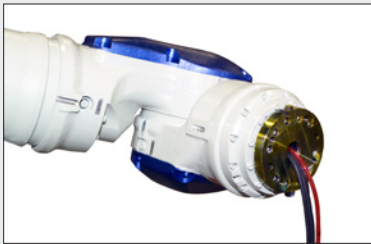
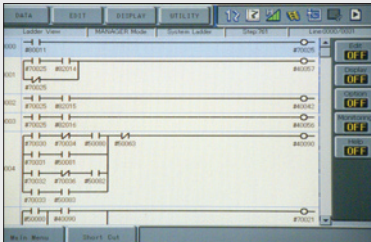


MACHINE TENDING



THRU-ARM CABLE AND HOSE ROUTING



LADDER EDITOR

## 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



# SDA20D

ASSEMBLY • HANDLING • MACHINE TENDING • PACKAGING • PART TRANSFER

Payload: 20 kg/arm

## 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.
- 20 kg (44.1 lb) payload per arm; 910 mm (35.8”) horizontal reach per arm; 1,820 mm (71.7”) vertical reach per arm; ±0.1 mm (0.004”) repeatability.
- Both robot arms can work together on one task to double the payload or handle heavy, unwieldy objects.

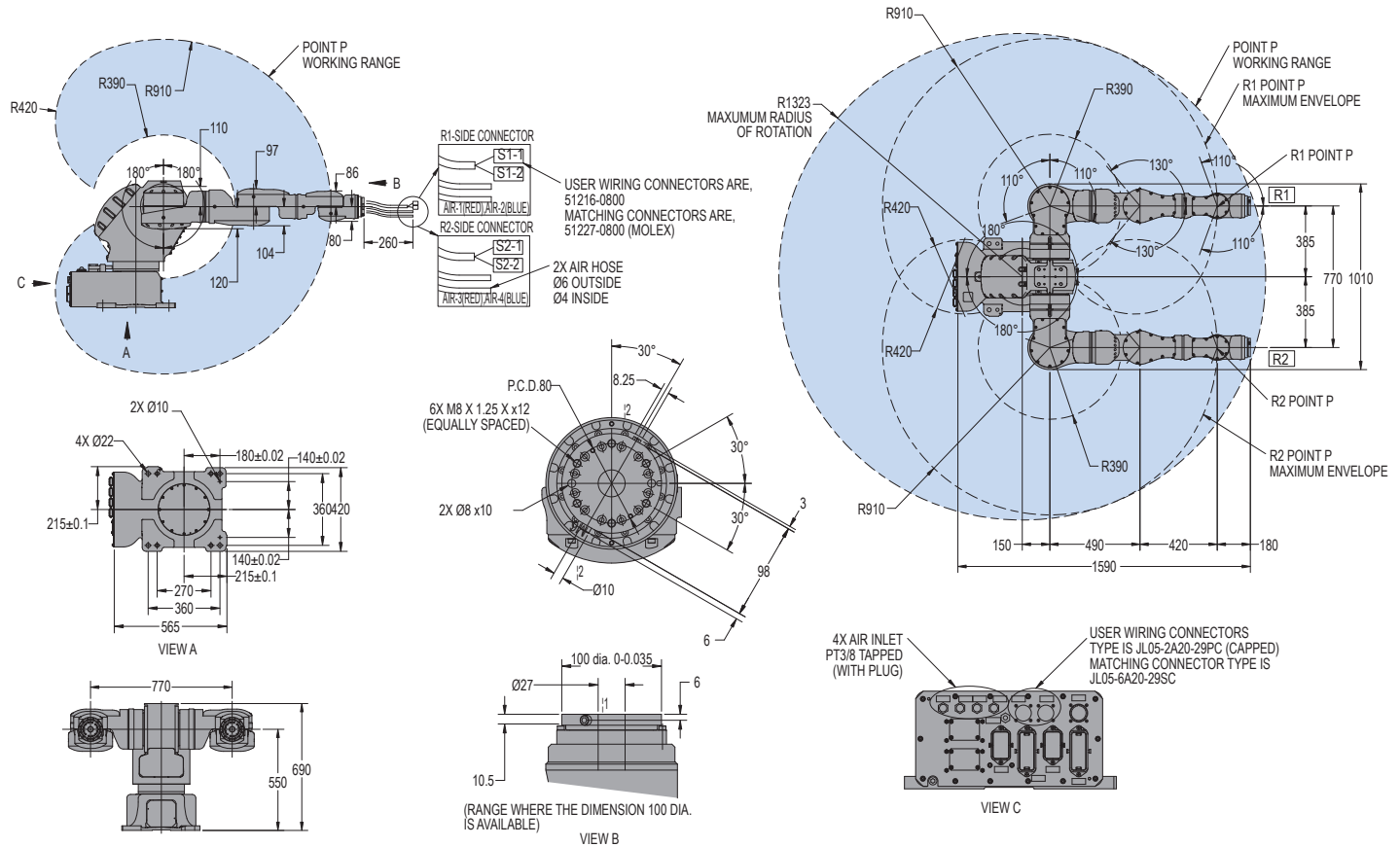
- Two manipulators can perform simultaneous independent operations.
- Can hold part with one arm while performing operations on it with other arm. Can transfer a part from one arm to the other with no need to set part down.

## 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, Profibus-DP and many others.
- Compliant to ANSI/RIA 15.06-1999 and other relevant ISO and CSA safety standards. Optional Category 3 functional safety unit.

# SDA20D ROBOT

All dimensions are metric (mm) and for reference only. Please request detail drawings for all design/engineering requirements.



## SDA20D SPECIFICATIONS

|  |  |                       |
|--|--|-----------------------|
| <b>Structure</b>                             | Articulated                            |                       |
| <b>Mounting</b>                              | Floor                                  |                       |
| <b>Controlled Axes</b>                       | 15 (7 axes per arm plus base rotation) |                       |
| <b>Payload</b>                               | 20 kg (44.1 lbs)/arm                   |                       |
| <b>Horizontal Reach per Arm</b>              | 910 mm (35.8")                         |                       |
| <b>Horizontal Reach (P-point to P-point)</b> | 2,590 mm (102")                        |                       |
| <b>Vertical Reach</b>                        | 1,820 mm (71.7")                       |                       |
| <b>Repeatability</b>                         | ±0.1 mm (±0.004")                      |                       |
| <b>Maximum Motion Range</b>                  | Rotation-Axis (Waist)                  | ±180°                 |
|  | S-Axis (Lifting)                       | ±180°                 |
|  | L-Axis (Lower Arm)                     | ±110°                 |
|  | E-Axis (Elbow)                         | ±170°                 |
|  | U-Axis (Upper Arm)                     | ±130°                 |
|  | R-Axis (Upper Arm Twist)               | ±180°                 |
|  | B-Axis (Wrist Pitch/Yaw)               | ±110°                 |
| T-Axis (Wrist Twist)                         | ±180°                                  |                       |
| <b>Maximum Speed</b>                         | Rotation-Axis                          | 125°/s                |
|  | S-Axis                                 | 130°/s                |
|  | L-Axis                                 | 130°/s                |
|  | E-Axis                                 | 170°/s                |
|  | U-Axis                                 | 170°/s                |
|  | R-Axis                                 | 200°/s                |
|  | B-Axis                                 | 200°/s                |
| T-Axis                                       | 400°/s                                 |                       |
| <b>Approximate Mass</b>                      | 380 kg (837.9 lbs)                     |                       |
| <b>Power Consumption</b>                     | 4.4 kVA                                |                       |
| <b>Allowable Moment</b>                      | R-Axis                                 | 58.8 N • m            |
|  | B-Axis                                 | 58.8 N • m            |
|  | T-Axis                                 | 29.4 N • m            |
| <b>Allowable Moment of Inertia</b>           | R-Axis                                 | 4 kg • m <sup>2</sup> |
|  | B-Axis                                 | 4 kg • m <sup>2</sup> |
|  | T-Axis                                 | 2 kg • m <sup>2</sup> |

## DX100 CONTROLLER SPECIFICATIONS\*\*

|                                   |  |
|-----------------------------------|--|
| <b>Dimensions (mm)</b>            | 1,200 (w) x 1,000 (h) x 650 (d) 47.2" x 39.4" x 25.6"  |
| <b>Approximate Mass</b>           | 250 kg max. (551.3 lbs)  |
| <b>Cooling System</b>             | Indirect cooling   |
| <b>Ambient Temperature</b>        | During operation: 0° to 45° C (32° to 113° F)<br>During transit and storage: -10° to 60° C (14° to 140° F)   |
| <b>Relative Humidity</b>          | 90% max. non-condensing  |
| <b>Primary Power Requirements</b> | 3-phase, 240/480/575 VAC at 50/60 Hz   |
| <b>Digital I/O</b>                | Standard I/O: 40 inputs/40 outputs consisting of 16 system inputs/<br>16 system outputs, 24 user inputs/24 user outputs<br>32 Transistor Outputs: 8 Relay Outputs<br>Max. I/O (optional): 2,048 inputs and 2,048 outputs |
| <b>Position Feedback</b>          | By absolute encoder  |
| <b>Program Memory</b>             | JOB: 200,000 steps, 10,000 instructions<br>CIO Ladder Standard: 15,000 steps Expanded: 20,000 steps  |
| <b>Pendant Dim. (mm)</b>          | 169 (w) x 314.5 (h) x 50 (d) (6.7" x 12.4" x 2")   |
| <b>Pendant Weight</b>             | .998 kg (2.2 lbs)  |
| <b>Interface</b>                  | One Compact Flash slot; One USB Port (1.1)   |
| <b>Pendant Playback Buttons</b>   | Teach/Play/Remote Keyswitch selector Servo On, Start, Hold, and Emergency Stop Buttons   |
| <b>Programming Language</b>       | INFORM III, menu-driven programming  |
| <b>Maintenance Functions</b>      | Displays troubleshooting for alarms, predicts reducer wear   |
| <b>Number of Robots/Axes</b>      | Up to 8 robots, 72 axes  |
| <b>Multi Tasking</b>              | Up to 16 concurrent jobs, 4 system jobs  |
| <b>Fieldbus</b>                   | DeviceNet Master/Slave, AB RIO, Profibus, Interbus-S, M-Net, CC Link, EtherNet IP/Slave  |
| <b>Ethernet</b>                   | 10 Base T/100 Base TX  |
| <b>Safety</b>                     | Dual-channel Emergency Stop Pushbuttons, 3-position Enable Switch, Manual Brake Release<br>Meets ANSI/RIA R15.06-1999, ANSI/RIA/ISO 10218-1-2007 and CSA Z434-03   |

\*\*See DX100 Controller data sheet (DS-399) for complete specifications

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