**SOLUTIONS IN MOTION®**

**DX100**

**ROBOT/SYSTEM CONTROLLER**

**Option:**

DXM100 Controller (smaller cabinet)

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**KEY FEATURES**

- Patented multiple robot control (up to 8 robots/72 axes)
- Faster processing, high performance
- Integrated cell (system-level) control capabilities
- Open communication
- Energy savings
- Compliant to safety standards
- Controller connections through back of unit optimize floorspace

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**Dynamic Next-Generation Controller**

- Features robust PC architecture. Provides system-level control for robotic workcells.
- Patented multiple robot control (up to 8 robots/72 axes), as well as I/O devices and communication protocols. Dynamic interference zones protect robot arm and provide advanced collision avoidance.
- Fast processing speed provides smooth interpolation.
- Advanced Robot Motion (ARM) control provides high performance. Best-in-class path planning dramatically reduces teaching time.
- Small, lightweight Windows® CE programming pendant features color touch screen with multiple window display capability. Unique cross-shaped navigation cursor reduces teaching time. All operator controls are located on pendant. Program file names can be up to 32 characters long.
- Convenient compact flash slot and USB port facilitate memory backups.
- Conserves power during robot idle time, providing up to 25% energy savings.

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- Highly flexible fieldbus support. Easy connection to information infrastructure through standard network options.
- Often eliminates need for separate PLC and human machine interface (HMI). Delivers significant cost savings at system level, while decreasing workcell complexity and improving overall reliability.
- Connections to controller cabinet are made through the back of the unit, optimizing floorspace.
- DX100 control cabinet allows for up to three external axes and can be remote-mounted. DXM100 supports up to two external axes. Top- or side-mount expansion options available for DX100 controller only.
- Easy maintenance with reducer status check function, enhanced troubleshooting and alarm recovery, and 20% improvement in MTTR.
DX100 ROBOT CONTROLLER SPECIFICATIONS

**Dimensions**
- DX100: 800 (w) x 1000 (h) x 650 (d) (31.5" x 39.4" x 25.6")
- DXM100: 800 (w) x 600 (h) x 650 (d) (31.5" x 23.6" x 25.6")

**Approximate Mass**
- DX100: 150-250 kg (330.8-551.3 lbs.)

**Cooling System**
- Indirect cooling

**Ambient Temperature**
- During operation: 0° to 45° C (32° to 113° F)
- During transport and storage: -10° to 60° C (14° to 140° F)

**Relative Humidity**
- 90% max. non-condensing

**Primary Power Requirements**
- 3-phase, 240/480/575 VAC at 50/60 Hz

**Digital I/O**
- NPN - Standard
- PNP - Optional
- Standard I/O: 40 inputs/40 outputs consisting of 16 system inputs/16 system outputs, 24 user inputs/24 user outputs
- 32 Transistor Outputs; 8 Relay Outputs
- Max. I/O (optional): 2,048 inputs and 2,048 outputs

**Position Feedback**
- Absolute encoder

**Program Memory**
- JOB: 200,000 steps, 10,000 instructions
- CIO Ladder Standard: 15,000 steps
- Expanded: 20,000 steps

**Interface**
- Ethernet, RS-232C

**Multiple Robot Control**
- Ability to control up to 8 robots/72 axes

**Safespecs**

**Collision Avoidance**
- Collision avoidance zones and radial interference zones

**Collision Detection**
- Protects robot by monitoring torque levels on manipulator

**Machine Lock**
- Permits testing of peripheral devices without robot operation

**Safety Interlock**
- Prevents robot operation while safety circuit is open

**Standard I/O - NPN**
- Forty optically isolated inputs, 32 transistor outputs, 8 relay contact outputs (configured to optimize each application), and four break-out cards are provided as standard. For arc welding applications, one YEW01 welder interface board is installed in the DX100 cabinet as standard (not available in DXM100).

**I/O Expansion - DX100**
- The DX100 supports I/O expansion via:
  - EtherNet/IP
  - DeviceNet
  - Profinet (optional)
  - Mechatrolink II
  - CC-Link

**I/O Expansion - DXM100**
- The DXM100 supports I/O expansion via:
  - EtherNet/IP
  - Remote I/O

**Programming Language**
- INFORM III, menu-driven programming

**Robot Motion Control**
- Joint motion, linear, circular, spline interpolation

**Speed Adjustment**
- Percentage of maximum for joint motion; mm/sec, cm/min, in/min for displacement; °/sec for orientation

**Device Instructions**
- Application-specific (ARCON, ARCOFF, LASERON, LASEROFF, HANSON, HANDOFF)

**I/O Instructions**
- Discrete I/O, 4-bit and 8-bit manipulation, analog output, analog input, analog scaling, sloping

**Operating System**
- Windows® CE

**Protection Rating**
- IP65

**Maintenance Functions**
- System monitor, internal maintenance clocks

**Self-Diagnostics**
- Classifies errors and major/minor alarms and displays data

**User Alarm Display**
- Displays alarm messages for peripheral devices

**Alarm Display**
- Displays alarm messages and alarm history

**I/O Diagnosis**
- Permits simulated enabled/disabled input/output

**TCP Calibration**
- Automatically calibrates parameters for end-effectors, optional TCP recovery function

**Tool Weight Calibration**
- Automatically calibrates total weight of tool, center of gravity and inertia for peak performance

**DX100 ROBOT CONTROLLER**

**DX100 Controller**

**DXM100 Controller**

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

**Standard I/O - NPN**
Fifty optically isolated inputs, 32 transistor outputs, 8 relay contact outputs (configured to optimize each application), and four break-out cards are provided as standard. For arc welding applications, one YEW01 welder interface board is installed in the DX100 cabinet as standard (not available in DXM100).

**I/O Expansion - DX100**
The DX100 supports I/O expansion via:
- EtherNet/IP
- Remote I/O
- DeviceNet
- Discrete I/O, NPN or PNP
- Analog I/O
- Mechatrolink II
- Other networks available
- CC-Link

**I/O Expansion - DXM100**
The DXM100 supports I/O expansion via:
- EtherNet/IP
- Remote I/O

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