The revolutionary NX100 controller features a Windows® CE programming pendant with color touch screen, high-speed processing, unmatched memory (60,000 steps, 10,000 instructions), built-in Ethernet, and a robust PC architecture. The NX100 features password protection with four levels and up to 100 individual users.

The NX100 easily handles multiple tasks, with unmatched ability to control up to four robots (up to 36 axes, including robots and external axes), and I/O devices. Dynamic interference spheres protect the robot arm, providing collision avoidance/arm interference prevention. Advanced Robot Motion (ARM) control provides high-performance path accuracy and vibration control. In addition, the NX100 features best-in-class path planning that dramatically reduces teaching time.

The programming pendant features a unique cross-shaped navigation cursor that reduces teaching time by 30 percent. It has full-color touch-screen display and a convenient compact flash slot for easy memory back-ups. All operator controls are located on the pendant, allowing the control cabinet to be mounted remotely.

Dual-channel safety features include enhanced E-Stop functionality, integrated speed monitoring, and manual brake release for the robot.

The NX100 also offers unmatched connectivity, highly flexible Fieldbus support, and easy connection to an information infrastructure through standard network options for DeviceNet, ControlNet, Profibus-DP, EtherNet/IP, and many others. An optional web server that allows remote monitoring and diagnosis is available.

By eliminating the need for a separate PLC, PC-based human machine interface (HMI), and separate password protection hardware, and by providing a standard Ethernet port, the NX100 delivers significant cost savings at the system level, while also decreasing system complexity and improving overall system reliability.
NX100 Robot Controller

SAFETY FEATURES
- Dual-channel Emergency Stop Pushbuttons, 3-Position Enable Switch built into pendant, Manual Brake Release
- Meets ANSI/RIA R15.06-1999 safety standard

Safely 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

NX100 ROBOT CONTROLLER SPECIFICATIONS

CONTROLLER
- Dimensions: 650(w) x 1,200(h) x 650(d) mm (25.6" x 47.2" x 25.6")
- Approximate Mass: 150-250 kg (330.8-551.3 lbs.)
- Cooling System: Indirect cooling
- Ambient Temperature: During operation: 0° C (32° F) to 45° C (113° F)
- During transport and storage: -10° C (14° F) to +60° C (140° F)
- Relative Humidity: 90% max., non-condensing
- Primary Power Requirements: 3-phase, 240/480/575 VAC at 50/60 Hz
- Digital I/O: Standard I/O: 40 inputs/40 outputs consisting of 16 system inputs/16 system outputs, 24 user inputs/24 user outputs Expandable to 1024 inputs/1024 outputs
- Position Feedback: Absolute encoder
- Program Memory: 60,000 steps and 10,000 instructions
- Interface: Ethernet, RS-232C
- Multiple Robot Control: Dual, triple, and quad

Safety Specs
- Dual-channel Emergency Stop Pushbuttons, 3-Position Enable Switch built into pendant, Manual Brake Release
- Meets ANSI/RIA R15.06-1999 safety standard

Collision Avoidance
- Collision avoidance zones and radial interference zones

Collision Detection
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Machine Lock
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Safety Interlock
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Pendant
- Dimensions: 199 x 338 x 60 mm (7.8" x 13.3" x 2.4")
- Display: 6.5 inch full color touch screen, 640 x 480 (VGA)
- Language: English, German, Japanese, Spanish, Chinese
- Weight: 1.34 kg (2.96 lbs.)

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, HANDON, HANDLEF)
- I/O Instructions: Discrete I/O, 4-bit and 8-bit manipulation, analog output, analog input, analog scaling, sloping
- Operation: Up to 5 levels of undo/redo

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: 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

All dimensions are metric (mm) and for reference only.

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 XEW01 welder interface board is installed in the cabinet as standard.

I/O Expansion
The NX100 supports I/O expansion via:
- Profibus-DP
- ControlNet
- Analog I/O
- DeviceNet
- Remote I/O
- Discrete I/O, NPN or PNP
- EtherNet/IP
- Other networks available

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