YRC1000
Industrial Robot Controller

Key Benefits
Compact, fast and flexible
Global standardization
High path accuracy
High efficiency

Next Generation Controller
Building on the success of the powerful DX200 controller, the YRC1000 controller is faster and more precise, with the added benefit of being housed in a compact, small footprint cabinet. With a user interface that supports smartphone-like touch operation, this next generation controller provides operators and service staff with powerful functionality while retaining the proven controller performance that Yaskawa is known for.

- Compact design, resulting in reduced space requirements.
- I/O communication speed is improved by as much as 50% for superior work efficiency.
- High path accuracy enables increased precision in trajectory performance independently of motion speed.
- Integrated machine and functional safety for simplified setup.
- Single controller-to-robot cable for improved cable reliability.
- Preventive maintenance information and powerful software tools for analysis and notification enable simplified maintenance.
- Built to a global standard and does not require a transformer for input voltages ranging from 380VAC to 480VAC.
- The YRC1000 controller is compatible with both the Standard Teach Pendant and the Smart Pendant.

Standard Teach Pendant
- Touch screen user interface enables fast and easy programming.
- Provides ability to evaluate 3D simulation of robot motion on screen before or during robot execution.
- USB connection allows service staff to directly connect for remote service purposes.
- SD card slot enables easy transfer of job programs.
- 3-position enable switch in compliance with DIN EN ISO 10218-1.

Smart Pendant
- Fast, simple learning curve; ideal for novice robot programmers.
- Easy-to-use 10-inch touchscreen interface.
- Simplified INFORM programming supports powerful controller functionality.
- Reduced programming time results in fast and efficient implementation of robot systems.
- Built-in Smart Frame eliminates coordinate frames; the robot adapts to the user.
- Consult Yaskawa Motoman for robot model compatibility.
## I/O Expansion and Networks

- EtherNet/IP
- DeviceNet
- Profinet
- CC-Link
- Mechatrolink II
- Discrete I/O
- Analog I/O
- Safety networks (various)
- Other networks available

### Digital I/O

**NPN - Standard | PNP - Optional**

Forty optically isolated inputs (32 transistor outputs, 8 relay contact outputs) configured to optimize each application. Four break-out cards to access I/O points are optional.

### I/O Expansion and Networks

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<th>Networking Options</th>
<th>Description</th>
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<tr>
<td>EtherNet/IP</td>
<td>Digital I/O expansion for increased connectivity</td>
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<tr>
<td>DeviceNet</td>
<td>Communication protocol for industrial automation networks</td>
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<tr>
<td>Profinet</td>
<td>Open software-based protocol for industrial automation networks</td>
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<tr>
<td>CC-Link</td>
<td>Medium to high-speed serial interface for network communication</td>
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<tr>
<td>Mechatrolink II</td>
<td>High-speed serial interface for network communication</td>
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### Safety Features

- **Controller safety-rated emergency stop and safety gate inputs.**
- **Programming pendant includes:** safety-rated emergency stop pushbutton, 3-position enable switch with key-lock and manual brake release built into programming pendant. Meets ANSI/RIA R15.06-2012 and CSA Z434-03
- **Safety Specs (Category 3 PLe):**
- **Standard Software Features:**
  - Arm interference, collision detection, machine lock and safety interlock
- **Functional Safety Unit**
  - (Category 3 PLe/SIL2)
  - Position monitoring (32 zones), speed limiting, tool monitoring, graphic pendant set-up

### Standard Teach Pendant

- **Dimensions:** 152 mm (w) x 299 mm (h) x 53 mm (d)
- **Pendant Display:** 5.7-inch full-color touch screen, 640 x 480 (VGA)
- **Pendant Languages:** English, German, Japanese, Spanish, Chinese
- **Pendant Weight:** .73 kg (1.6 lbs)
- **Material:** Reinforced plastics
- **Coordinate System:** Joint, rectangular, cylindrical, tool, 63 user-coordinate frames
- **Windows® Menu-Driven Interface:** User-selectable touch-screen menu, multiple windows supported; one SD card slot; one USB port (2.0)
- **Pendant O/S:** Windows Embedded Compact 7
- **Protection Rating:** IP54 (duct fan is IP2X)

### Programming

- **Programming Language:** INFORM III, menu-driven programming
- **Robot Motion Control:** Joint motion, linear, circular, spline interpolation
- **Multiple Device Control:** Parallel Start, Twin Synchronous, Multiple Group Combinations, Station Coordinated Moves (positioners), Bases (tracks and gantries)
- **Programmable Logic Control:** Ladder monitor, ladder programming, I/F pendant display, address naming, expanded logic operands
- **Device Instructions:** Application specific (arc and spot welding, handling, general purpose)
- **I/O Instructions:** Discrete I/O, 4-bit and 8-bit manipulation, analog output, analog input, analog scaling, sloping

### Maintenance

- **Maintenance Functions:** System monitor, internal maintenance clocks
- **Self-Diagnostics:** Classifies errors and major/minor alarms and displays data; monitors reducers for predictive wear; alerts when major power components reach design life
- **User Alarm Display:** Displays alarm messages for peripheral devices
- **Alarm Display:** Alarm messages; alarm history provides instruction of how to repair fault
- **I/O Diagnosis:** Permits simulated enabled/disabled input/output

* Smart Pendant - refer to Smart Pendant data sheet for details