

# 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.

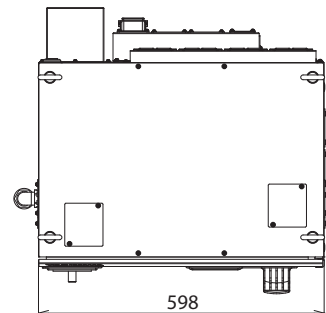
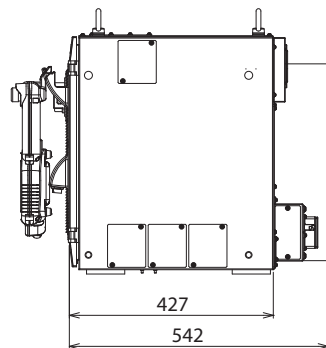
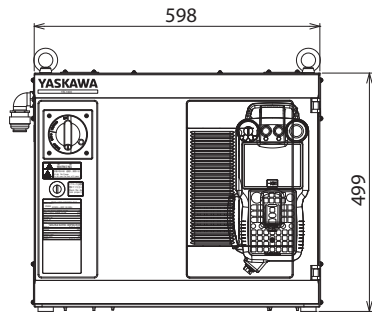
### Standard Teach Pendant

- 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.

# YRC1000 Controller



## Standard I/O - NPN

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

## I/O Expansion and Networks

- EtherNet/IP
- DeviceNet
- Profibus-DP
- CC-Link
- Profinet
- Mechatrolink II
- Discrete I/O
- Analog I/O
- Other networks available

## SPECIFICATIONS

### Controller

Dimensions	598 mm (w) x 499 mm (h) x 427 mm (d)
Approximate Mass	70 kg max.
Cooling System	Indirect cooling
Ambient Temperature	-0° to 45° C (operation); -10° to 60° C (storage)
Humidity	90% max. non-condensing
Primary Power Requirements	3-phase, 380-480 VAC (+10%, -15%), 50/60 Hz (±2%)
Short Circuit Current Rating (SCCR)	5 kA
Digital I/O	4,096 inputs and 4,096 outputs
NPN - Standard	Standard I/O: 40 inputs / 40 outputs consisting of 24 user inputs / 24 user outputs
PNP - Optional	32 transistor outputs; 8 relay outputs max. I/O
Position Feedback	Absolute encoder
Program Memory	JOB: 200,000 steps, 10,000 instructions CIO Ladder Standard: 20,000 steps
Expansion Slots	2 x PCIe (standard); 2 x PCI or 1 x PCI/1 x PCIe (optional)
LAN (Connection to Host)	Ethernet 2 (10 BASE-T / 100 BASE-TX)
Interface	RS-232C/RS422: 1 ch
Multiple Robot Control	Ability to control up to 8 robots / 72 axes (not applicable for collaborative robots)
Protection Rating	IP54 (duct fan is IP2X)

### Safety Features

Safety Specs (Category 3 PLc)	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
Standard Software Features	Arm interference, collision detection, machine lock and safety interlock
Functional Safety Unit (Category 3 PLd 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

### 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

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