

**YASKAWA**

# MOTOMAN YRC1000

Industrial Robot Controller



# High Performance Controller YRC1000 for MOTOMAN Robots

The MOTOMAN YRC1000 is a compact, fast and flexible controller for MOTOMAN robots that combines high performance robot control in a small footprint cabinet with volume of 125 litres and a maximum weight of 70 kg.

Besides the typical YASKAWA controller functionality, the YRC1000 includes additional functional improvements. Speed of the controller has been increased by lowering a ladder scanning time.

Path accuracy improvement assures increased precision in trajectory performance independently on the motion speed.

User interface supports smartphone like touch operations and allows the user to 3D simulate robots motion on PP screen before and during execution of the real robot arm. Service staff can directly connect to the PP user interface for remote service purposes. Total programming pendant's weight was reduced to 730 grams which offers more convenient use by the operator. The new controller simplifies maintenance by offering preventive maintenance information and powerful software tools for analysis and notification.

## KEY BENEFITS

- Compact, fast and flexible
- Global standardization (no transformer required)
- High path accuracy
- High efficiency

## Optimal Industrial Design

- Volume: 125 liters



## Programming Pendant (PHG) – ergonomical, light and easy

The image shows the YASKAWA Programming Pendant (PHG) with various callouts pointing to its features:

- 5.7" LCD colour display**
- Touch screen**
- Option: Windows operating system**
- Operation keys start/stop emergency off** (pointing to the red emergency stop button)
- USB-Connection and SD-card slot (reverse side)**
- Cursor key**
- Main axes keys** (pointing to the X, Y, Z, W, U, V keys)
- Additional axes keys** (pointing to the A, B, C, D, E, F keys)
- 3 position dead man switch in compliance with DIN EN ISO 10218-1** (pointing to the bottom switch)
- Display can be individually set for applications:**
  - Shielded Arc Welding
  - Spot Welding
  - General Applications

Additional features listed at the bottom:

- Easy and fast programming
- Several user levels – from operator to safety mode
- Help function



Common Size for use  
in Japan, Asia, Europe, and the U.S.



Specifications Controller YRC1000	
<b>Dimensions</b>	598 (W) x 490 (H) x 427 (D) mm (125 l without protrusion parts)
<b>Mass</b>	70 kg max. (possible to control three external axes)
<b>Cooling system</b>	Indirect cooling
<b>Ambient temperature</b>	During operation: 0°C to +45°C / During storage: -10°C to +60°C
<b>Relative humidity</b>	90 % max. (non-condensing)
<b>Power supply</b>	Three-phase 380–440 VAC (+10 %, -15 %), 50/60 Hz (±2 %)
<b>Digital I/Os</b>	Specialized signals: 19 inputs and 6 outputs / General signals: 40 inputs and 40 outputs
<b>Programming capacity</b>	JOB: 200,000 steps, 10,000 instructions / CIO ladder: 20,000 steps
<b>Expansion slots</b>	2 x PCIe or 2 x PCI or 1 x PCI/1 x PCIe
<b>LAN (Connection to host)</b>	2 (10BASE-T/100BASE-TX)
<b>Interface</b>	RS-232C/RS422: 1 ch (used by switching)

## Improved Programming Pendant



Specifications Programming Pendant	
<b>Dimensions</b>	152 (W) x 299 (H) x 53 (D) mm
<b>Mass</b>	0.730 kg
<b>Material</b>	Reinforced plastics
<b>Operation Device</b>	Select keys, axis keys, numerical/application keys, mode selector switch with keys (mode: teach, play, and remote), emergency stop button, enable switch, SD card interface device, USB port (1 port)
<b>Display</b>	5.7-inch color LCD, touch panel 640 x 480 pixels
<b>IEC Protection Class</b>	IP54

# MOTOMAN YRC1000 – Options

## YRC1000 Design Concept

### Master cabinet with option cabinets:

- Variations of YRC1000 standalone\* or with option cabinets
- Possibility of mounting options (i.e. IO terminals, additional IO board, Harting connectors for external axes, etc.)

\* YRC1000 standalone only according to EN 60204-1 (see YRC1000 standalone)



## YRC1000 Standalone

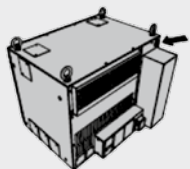
### Master cabinet standalone:

- In case that YRC1000 is a main cabinet in the system (i.e. Main switch of the cabinet is also main switch of the whole system), YRC1000 cannot stand on the servicing level directly
- EN 60204-1 states minimum position of the system's main switch with respect to the servicing level, as well as minimum height of cables connected to the cabinet above the servicing level



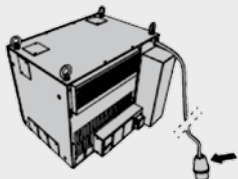
Dimensions in mm

## YRC1000 Power Supply Variants



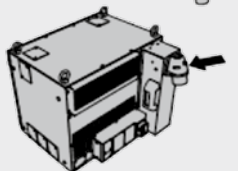
### 1. Direct connection (standard):

- Connection is made directly to the main switch, the cable goes through an opening at the back side of the YRC1000 cabinet at the upper right corner
- Connection inside the controller can be made by electrician only



### 2. CEE connector with a cable (option):

- YASKAWA can deliver YRC1000 cabinet with CEE socket, plug and cable (L = 5 m)
- No additional wiring in the controller is needed



### 3. CEE connector at the cabinet (option):

- CEE socket is mounted at the CEE hood at the back side of the YRC1000 cabinet
- No additional wiring in the controller is needed

## YRC1000 Robot Cable Variants



### 1. Straight cable at controller side/straight cable at robot side:




- Robot cable connector is straight on controller side
- Robot cable connector is straight on robot side
- This configuration does allow any space under the cable and cable connector
- This configuration may restrain area behind the controller due to the robot cable bending ratio ( $R = 270 \text{ mm}$ )



### 2. Angled cable at controller side/straight cable at robot side:



- Robot cable connector is angled on controller side
- Robot cable connector is straight on robot side
- This configuration requires free space under the cable and cable connector
- Can be used in case that YRC1000 controller is elevated by means of socket cabinet or other stand
- This configuration does not require additional space behind the controller other than free space required by mounting instructions (cooling of the cabinet)

## YRC1000 Controller Module Options

Visual	Name	Dimension	Art.-No. 1	Art.-No. 2
	Socket cabinet with angled connector plate	H = 250 mm	183292	143815100
	Cabinet with angled connector plate	H = 499 mm	183294	143816100
	Cabinet without angled connector plate		183293	143817100
	Cabinet with angled connector plate, double height	H = 989 mm	187153	143816110

# MOTOMAN YRC1000 – Options

## YRC1000 Socket Cabinet Options

Visual	Name	Description	Art.-No. 1	Art.-No. 2
	Drawer for socket cabinet	Backside of the cabinet, drawer used for easy access into the socket (mounting of IO terminals)	187154	143818100
	Mounting plate in socket cabinet, C-rail and other components	Fixing element in the drawer	187155	143889100



## YRC1000 H = 499 mm and H = 989 mm Cabinet Options

Visual	Name	Description	Art.-No. 1	Art.-No. 2
	Swing frame for standard cabinet, H = 499 mm	Inside the cabinet for easy access, plate for IO terminals mounting	187156	144270100
	Swing frame (high) for double height cabinet, H = 989 mm		187157	144270110

# YRC1000 Option Cabinet – available Equipment

## Master cabinet with socket cabinet:

### Socket cabinet with height of 250 mm

- 4 x IO transfer element (with and without relay)
- Full version of Cable Set A incl. FSU signals
- Full version of Cable Set B
- FSU transfer element
- Conveyor cabling
- Connectors for external axes (max. 3)

*Option cabinet  
with angled  
connector plate*



## Master cabinet with option cabinet H = 499 mm with or without angled connector plate:

### Option cabinet with height of 499 mm

- 4 x IO transfer element (with and without relay) on a swing frame
- Full version of cable set A incl. FSU
- Full version of cable set B
- FSU transfer element
- Conveyor cabling
- Connectors for external axes (max. 3)
- Additional IO board
- Mounting plate for additional equipment
- Mounting plate as a swing frame for additional equipment (option)

*Option cabinet  
with angled  
connector plate*



## Master cabinet with option cabinet H = 989 mm:

### Option cabinet with height of 989 mm

- 4 x IO transfer element (with and without relay) on a swing frame
- Full version of cable set A incl. FSU
- Full version of cable set B
- FSU transfer element
- Conveyor cabling
- Connectors for external axes (max. 3)
- Additional IO board
- Mounting plate for additional equipment
- Mounting plate as a swing frame for additional equipment (option)

*Option cabinet  
with angled  
connector plate*

