

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 highlighting its features:

- 5.7" LCD colour display**
- Touch screen**
- Option: Windows operating system**
- Operation keys start/stop emergency off**
- USB-Connection and SD-card slot (reverse side)**
- Cursor key**
- Main axes keys**
- Additional axes keys**
- 3 position dead man switch in compliance with DIN EN ISO 10218-1**
- 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



Specifications controller YRC1000	
Dimensions	598 (W) x 490 (H) x 427 (D) mm (125 l without protrusion parts)
Weight	70 kg max. (possible to control three external axes)
Protection class	IP54
Cooling system	Indirect cooling
Ambient temperature	During operation: 0°C to +45°C / During storage: -10°C to +60°C
Relative humidity	90 % max. (non-condensing)
Power supply	Three-phase 380–440 VAC (+10 %, -15 %), 50/60 Hz (±2 %)
Digital I/Os	Specialized signals: 19 inputs and 6 outputs / General signals: 40 inputs and 40 outputs
Programming capacity	JOB: 200,000 steps, 10,000 instructions / CIO ladder: 20,000 steps
Expansion slots	2 x PCIe or 2 x PCI or 1 x PCI/1 x PCIe
LAN (Connection to host)	2 (10BASE-T/100BASE-TX)
Interface	RS-232C/RS422: 1 ch (used by switching)

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



Improved Programming Pendant



Specifications programming pendant	
Dimensions	152 (W) x 299 (H) x 53 (D) mm
Weight	0.730 kg
Material	Reinforced plastics
Operation device	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)
Display	5.7-inch color LCD, touch panel 640 x 480 pixels
IEC protection class	IP54

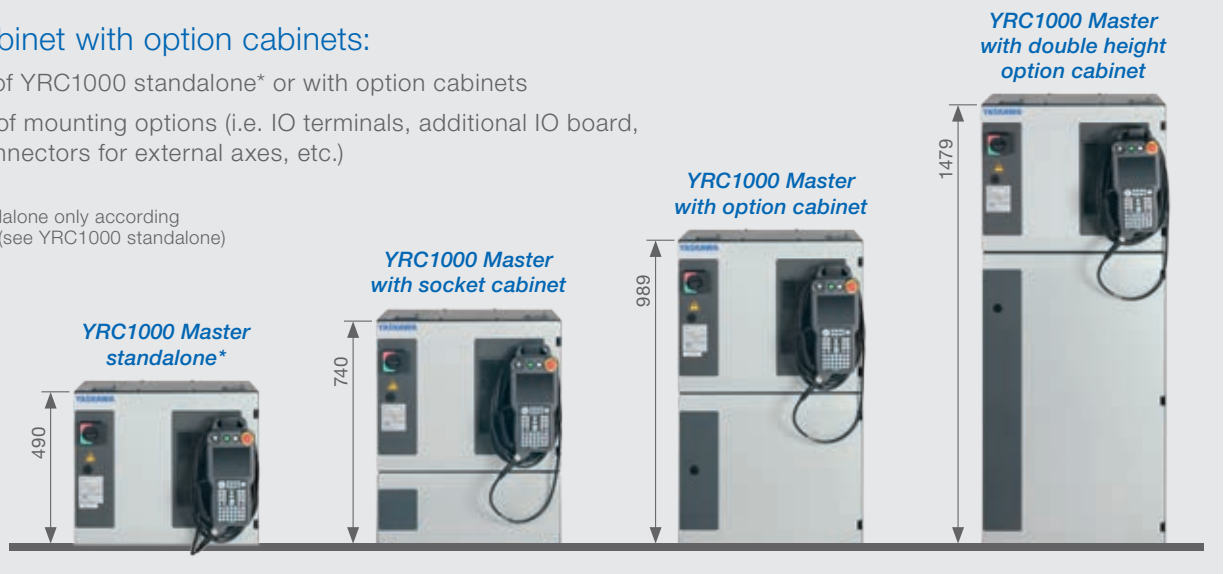
MOTOMAN YRC1000 – Options

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

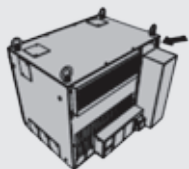
Master cabinet standalone:

- 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



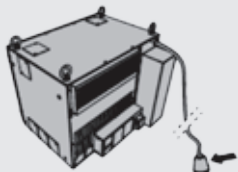
Dimensions in mm

YRC1000 Power Supply Variants



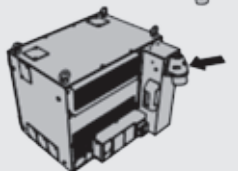
1. Direct connection (option):

- 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 (standard):

- 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)

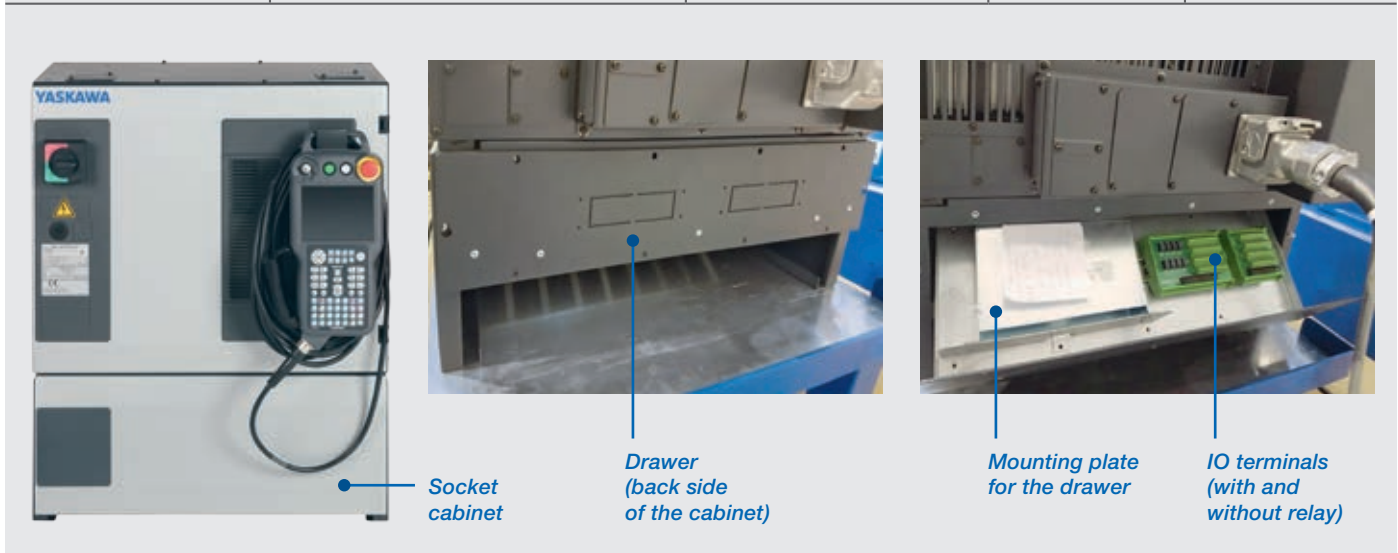
YRC1000 Controller Module Options

Visual	Name	Dimension	Art.-No. 1	Art.-No. 2
	Socket cabinet with angled connector plate	H = 250 mm	191963	143815100
	Cabinet with angled connector plate	H = 499 mm	191965	143816100
	Cabinet without angled connector plate		191966	143817100
	Cabinet with angled connector plate, double height	H = 989 mm	191967	143816110

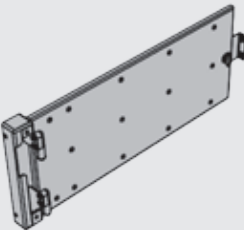
MOTOMAN YRC1000 – Options

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

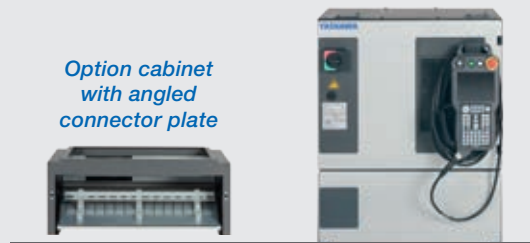
YRC1000 Option Cabinet – available Equipment

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*



YASKAWA GROUP

AT	YASKAWA Austria Schwechat/Wien +43(0)1-707-9324-15
CZ	YASKAWA Czech s.r.o. Rudná u Prahy +420-257-941-718
ES	YASKAWA Ibérica, S.L. Gavà/Barcelona +34-93-6303478
FR	YASKAWA France SARL Le Bignon +33-2-40131919
FI	YASKAWA Finland Oy Turku +358-(0)-403000600
GB	YASKAWA UK Ltd. Banbury +44-1295-272755
IT	YASKAWA Italia s.r.l. Torino +39-011-9005833
IL	YASKAWA Europe Technology Ltd. Rosh Ha'ayin +972-3-9004114
NL	YASKAWA Benelux B.V. Eindhoven +31-40-2895500
PL	YASKAWA Polska Sp. z o.o. Wrocław +48-71-7928670
RU	YASKAWA Europe Holding AB Moskva +46-480-417-800
SE	YASKAWA Nordic AB Torsås +46-480-417-800
SI	YASKAWA Slovenia Ribnica +386-1-8372-410
TR	YASKAWA Turkey Elektrik Ticaret Ltd. Sti. İstanbul +90-216-5273450
ZA	YASKAWA Southern Africa (PTY) Ltd Johannesburg +27-11-6083182

DISTRIBUTORS

BG	ARAMET ROBOTICS Ltd. Yambol +359-885 317 294 Kammarton Bulgaria Ltd. Sofia +359-02-926-6060
DK	Robotcenter Danmark Løsning +45 7022 2477
EE	RKR Seadmed OÜ Tallinn/Estonia +372-68-35-235
GR	Gizelis Robotics Schimatari Viotias +30-2262057199
HU	Flexman Robotics Kft Budapest +36 1 259 0981
LT	Profibus UAB Panevezys +370-45-518575
NO	Skala Robotech AS Lierstranda +47-32240600
PT	ROBOPLAN Lda Aveiro +351-234 943 900
RO	Sam Robotics srl Timisoara +40-720-279-866 MPL Automation S.R.L. Satu Mare +40 (0) 261 750 741



YASKAWA Headquarters

YASKAWA Europe GmbH
Robotics Division
Yaskawastraße 1
85391 Allershausen, Germany
Tel. +49 (0) 8166/90-0
Fax +49 (0) 8166/90-103

robotics@yaskawa.eu.com
www.yaskawa.eu.com

YASKAWA ACADEMY and sales office Frankfurt

YASKAWA Europe GmbH
Robotics Division
Hauptstraße 185
65760 Eschborn, Germany
Tel. +49 (0) 6196/77725-0
Fax +49 (0) 6196/77725-39

All drawing dimensions in mm.
Technical data may be subject to change without previous notice.
Please request detailed drawings at robotics@yaskawa.eu.com.

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