

MotoMini Industrial Robot

The MotoMini robot is the smallest and lightest 6-Axis robot in the industry. The 7-kg (15.5 lb) robot is easy to carry, ship and install.

Equipped with the highest acceleration in a small-sized robot the MotoMini is 20% faster than comparable small robots, reducing cycle time and boosting productivity.

Internal cabling and air lines minimize interference with other process equipment, and a variety of mounting options (surface, wall ceiling, etc.) accommodate high-density factory layouts. Designed for extremely agile high-speed performance for a wide range of applications, the quiet, compact, and precise MotoMini can take small-part processes to the next level.

The MotoMini is paired with the advanced YRC1000micro controller, the smallest robot controller in its class, that can be installed in either a vertical or horizontal position, as well as within a 19-inch rack. The YRC1000micro sports functions & performance optimized for transfer and assembly applications. The YRC1000micro offers easy connectivity to peripherals, high speed and high precision motion control, and advanced safety functions..



Features

- Extremely lightweight, six-axis industrial robot with high acceleration
- Industry 4.0 integration and functionality built in
- Tabletop, floor, ceiling, tilt or wall mount installations save valuable floor space
- 0.5 kg (1.1 lb) payload
- Unique variety of tooling and sensors to fulfill diverse project needs
- Compact footprint allows mounting close to workpieces and machinery
- Cables and air lines routed through robot increase cable life, enhance safety and reduce teaching time
 - Single power and control cable for easy setup
- Less than 65 dB for quiet operation
- Home position data can be saved without battery connection for easy maintenance
- Works with powerful and precise ultra-compact YRC1000micro controller

Applications Examples

- Assembly
- Dispensing
- Inspection
- Kitting
- Machine Tending
- Material Handling
- Packaging
- Parts Feeding
- Sorting

Robot Specifications

Structure: 6 Axis articulated arm

Axis Movement	Range	Maximum Speed	Allowable Moment	Allowable Moment of Inertia
S-Axis (Swivel Base)	±170°	315°/s		
L-Axis (Lower Arm)	+90°/-85°	315°/s		
U-Axis: (Upper Arm)	+120°/-175°	420°/s		
R-Axis: (Arm Roll)	±140°	600°/s	0.42 N • m	0.00378 kg • m ²
B-Axis: (Wrist Bend)	±210°/-30°	600°/s	0.42 N • m	0.00378 kg • m ²
T-Axis: (Tool Flange)	±360°	600°/s	0.37 N • m	0.00299 kg • m ²

Horizontal Reach: 350 mm (13.8")

Vertical Reach: 495 mm (19.5")

Repeatability: ±0.02 mm (±0.0008")

Weight: 7 kg (15.5 lbs)

Power Consumption: 0.5 kVA

Payload: 0.5 kg (1.1 lbs)

Footprint: (191 mm x 124 mm)



Industry 4.0 for Education

MotoMini Industrial Robot

Standard Programming Pendant

- Dimensions:** 152 (W) x 299 (H) x 53 (D) mm
6.0" (W) x 11.8" (H) x 2.1" (D)
- Weight:** 0.73 kg / 1.61 lbs
- Display:** 5.7-inch color LCD, touch panel 640 x 480 pixels
- IEC Protection Class:** IP54
- Cable Length:** Standard: 8 m, max: 20 m (optional).



Smart Programming Pendant

- Capacitive touchscreen smart device:**
10.1" WXGA TFT Display
1280 x 800 pixels
LED back light touch panel

- Dimensions:** 215 (W) x 283 (H) x 68.5 (D) mm
8.5" (W) x 11.1" (H) x 2.7" (D)

- Weight:** 1.12 kg / 2.5 lbs



Yaskawa Certification

Students who complete the MotoMan Robotics curriculum are eligible to become Certified as a MotoMan Operators and/ or Programmers. At the completion of each course, the course concludes with a practical exam which the student must pass before taking the Certification exam.

Candidates that successfully complete the practical exam are then eligible to take the final certification exam to be certified and receive a certificate of completion



YRC1000micro Controller Specifications

- Optimized acceleration/ deceleration control improves robot cycle time up to 10%
- High path accuracy control enables increased path precision
- Single controller-to-robot cable for easy setup and improved cable reliability
- Easily connects to peripheral devices
- Faster ladder scanning time and fast I/O speed for little to no communication lag for advanced system devices
- Built-in preventative maintenance tools to prolong system life
- 3D Robot simulation on pendant to confirm programmed coordinates
- Functional Safety Unit already integrated.

- Dimensions:** 425 (W) x 125 (H) x 280 (D) mm
16.7" (W) x 4.9" (H) x 11.0" (D)

- Weight:** 10.5kg / 23.2 lbs

- Ambient Temperature:** 0°C to +40°C (operation)
-10°C to +60°C (storage)

- Type of Control:** Software servo control

- Communications:** 1 (10BASE-T/100BASE-TX)

- Digital I/Os:** Specialized signals: 7 inputs and 1 output
General signals: 8 inputs and 8 outputs
(8 transistor outputs)

- IEC Protection Class:** IP20

- Programming Capacity:** JOB: 200,000 steps, 10,000 instructions
CIO ladder: 1,500 steps max.

- Expansion Slots:** PCI express: 2 slots

- Positioning System** Serial communications (absolute encoder)

- Power Requirements** Single-phase 200/230 VAC (+10% to -15%),
50/60 Hz (±2%)

- Safety Features:** Integrate FSU (Functional Safety Unit) for position monitoring (32 zones), speed limiting, tool monitoring, graphic pendant setup.



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