YASKAWA

MOTOMAN ROBOTICS

NXM100 CONTROLLER

PACKAGING

YS-series 4-axis SCARA robots are ideal for high-speed handling and assembly systems; same controller as other Motoman® robots allows easy integration

YS450

FEATURES & OPTIONS

- ◼ 5 kg payload

- ◼ High-speed "pick-and-place" motion

- ◼ Compact, mid-size NXM100 controller

- ◼ Proven Yaskawa servo drives

- ◼ MotoSim® EG simulation software (optional)

- ◼ MotoSight 3D vision software (optional)

High-Speed SCARA Robots

The YS450 4-axis, SCARA robots offer high speed in a compact form that requires minimal installation space. The YS450 model features a reach of 450 mm, Z-axis stroke of 170 mm and 5 kg maximum payload.

The YS-series robots feature an IP20 rating and offer superior performance in applications such as assembly, part kitting, small part handling, case packing, lab automation, and magnetic media and semiconductor processing.

These robots easily integrate with existing robot applications to expand current automated processes. They are ideal for large, multi-process systems requiring pick-and-place capability.

YS-series robots feature the same NXM100 controller used with Motoman Robotics' small six-axis robots (HP3M-series and HP6M-series).
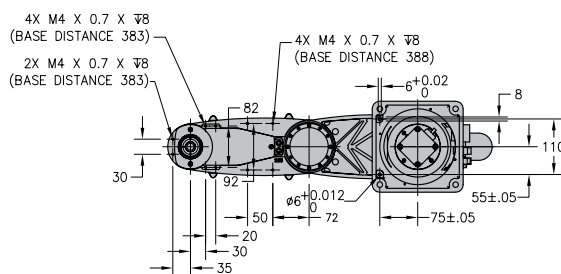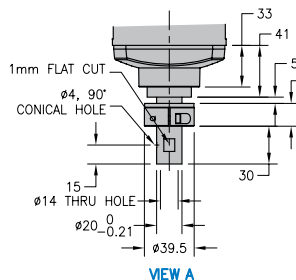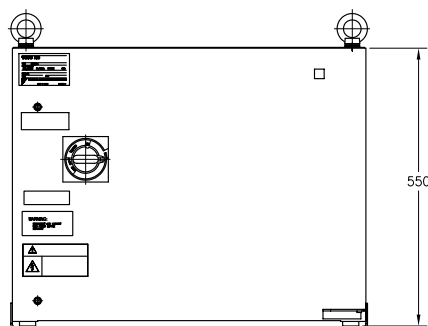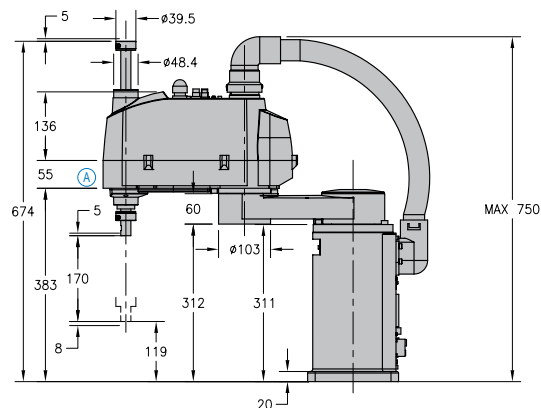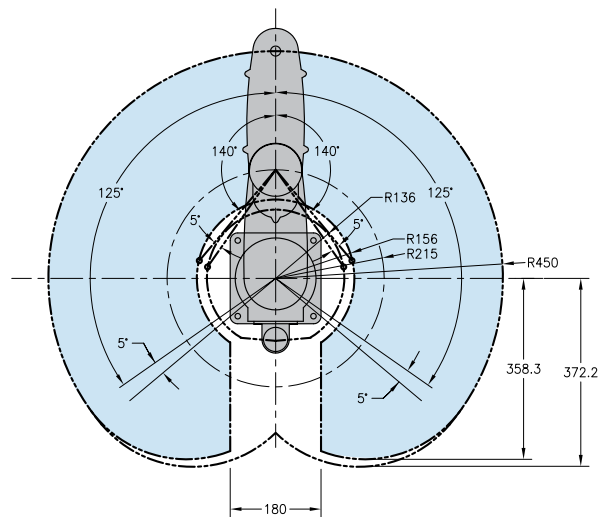
NXM100 Controller

The compact NXM100 controller easily fits underneath conveyors or the controller cabinets can be stacked to provide floorspace savings. The high-performance NXM100 controller delivers all of the same features of the full-sized NX100 controller in a much smaller "mid-size" cabinet. The NXM100 provides patented multiple robot control capability (up to FOUR robots with one pendant), open communication, and integrated cell control. It has the ability to fit one optional external axis servo amplifier for seventh axis control.

The NXM100 robot controller features a Windows® CE programming pendant with color touch screen; easy-to-use INFORM III programming language; a robust PC architecture; and built-in Ethernet. The NXM100 includes four levels of password protection. All operator controls are located on the pendant, allowing the control cabinet to be mounted remotely.

The NXM100 controller also offers unmatched connectivity, highly flexible Fieldbus support, and easy connection to an information infrastructure through standard network options for DeviceNet, ControlNet, Profibus-DP, EtherNet/IP, and many others.

YS450 ROBOT

All dimensions are metric (mm) and for reference only. Please request detail drawings for all design/engineering requirements.

YS450 SPECIFICATIONS

Reach		450 mm (17.7")
Environment		Standard (IP20)
Range of Motion	S-Axis + L-Axis	450 mm
	S-Axis (1st horizontal arm)	±125°
	L-Axis (2nd horizontal arm)	±140°
	U-Axis (upper/lower)	170 mm
	R-Axis (rotate)	±360°
Axis Combination		T1 + T2 + Z + R
Payload		2 kg (at max speed), 5 kg (at reduced speed)
Maximum Speed	S-Axis	375 °/s
	L-Axis	600 °/s
	U-Axis	1,100 mm/s
	R-Axis	1,870 °/s
Repeatability	S-Axis + L-Axis	±0.015 mm
	U-Axis	±0.01 mm
	R-Axis	±0.02°
Max. Pressure		150 N (15.5 kgf)
Allowable Moment of Inertia		0.01 kg • m² (rated), 0.12 kg • m² (max)
Position Detection		Absolute encoder
Air Supply		(2) 6 mm, (1) 4 mm
Mass		20 kg (44.1 lb.)

NOTE: Actual maximum speed and moment of inertia may vary depending on actual payload.

NXM100 CONTROLLER SPECIFICATIONS*

Structure	Free-standing, enclosed type
Dimensions (mm)	700 (w) x 550 (h) x 650 (d) (27.6" x 21.7" x 25.6")
Approximate Mass	70 kg (154 lbs.)
Cooling System	Indirect cooling
Ambient Temperature	During operation: 0° C (32° F) to 45° C (113° F) During transmit and storage: -10° C (14° F) to +60° C (140° F)
Relative Humidity	90% max. non-condensing
Primary Power Requirements	3-phase, 200/220 VAC(+10% to -15%) at 50/60 Hz
Grounding	Grounding resistance: ≤100 ohms Separate ground required
Digital I/O NPN-Standard PNP-Optional	Standard I/O: 40 inputs/40 outputs consisting of 16 system inputs/16 system outputs, 24 user inputs/24 user outputs Enabled to 1,024 inputs/1,024 outputs
Position Feedback	Absolute encoder
Drive Units	Servo packs for AC servo motors
Accel/Decel	Software servo control
Program Memory	60,000 steps and 10,000 instructions
Pendant Dim. (mm)	199 (w) x 338 (h) x 60 (d) (7.8" x 13.3" x 2.4")
Pendant Playback Buttons	Teach, Play, Remote, Servo On, Start, Hold, Emergency Stop, Edit Lock (Play Mode Enabled on Controller)
Concurrent I/O Ladder	10,000 Instructions, 60,000 Steps
Multi Tasking	Up to 8 concurrent jobs
Fieldbus	DeviceNet Master/Slave, AB RIO, Profibus, Interbus-S, M-Net, CC Link, EtherNet IP/Slave
Ethernet	10 Base T/100 Base TX
E-Stop	Controlled stop
Safety	Dual-channel Emergency Stop Pushbuttons, 3-position Enable Switch built into pendant, Manual Brake Release (U-Axis Only) Meets ANSI/RIA R15.06-1999 safety standard

*See NXM100 Controller data sheet (DS-305) for complete specifications

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