

INTERNALLY ROUTED CABLES AND HOSES



FAMILIAR PROGRAMMING INTERFACE



FS100 CONTROLLER

TOP REASONS TO BUY

- High-speed robot with best-in-class axis speeds
- Energy saving design does not require expensive compressed air for cooling
- Washdown-ready robot (optional) for food and other applications where cleanliness is important
- Ready for food applications with NSF-H1 certified food-grade grease
- Hollow wrist with through-arm cabling reduces interference and improves system reliability



MPK2F MPK2F-5

PICKING • PACKING

Payloads:
2 kg (MPK2F)
5 kg (MPK2F-5)

The MPK2F and MPK2F-5 are high-performance 5-axis robots designed for high-speed picking and case-packing applications. Ideal for placing product into a deep case. The FS100 is a powerful controller with unmatched open software architecture.

Fast, Flexible and Compact

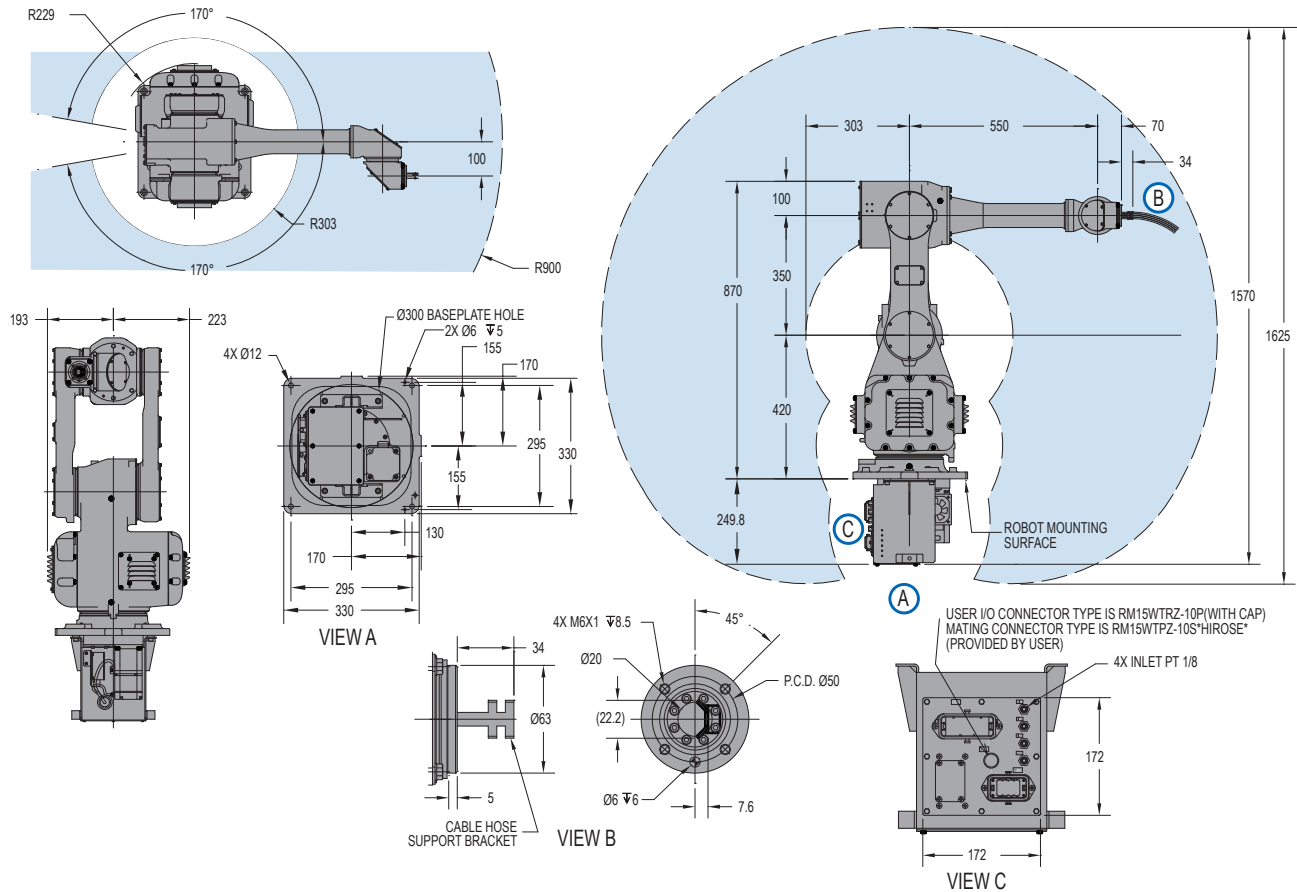
- Ideal for high-speed picking, kitting and cartoning of food and consumer goods.
- 900 mm horizontal reach provides largest work envelope in its class.
- Payload capacity for the MPK2F is 2 kg, the MPK2F-5 is 5 kg. Both models have ± 0.5 mm repeatability.
- Compact, slim arm design allows reach into confined spaces, improving system productivity. Deep work envelope provides flexibility for a range of applications.
- Hollow arm design allows cables and hoses to be run internally throughout entire robot from base to wrist which improves reliability.
- Wrist speed of 2,000 degrees per second provides maximum productivity, even when parts need to be rotated.
- IP67 robot. Rated for washdown cleaning (when optional covers are installed), even with certain caustic cleaners.
- Ready for food applications with National Sanitation Foundation (NSF-H1) certified food-grade grease.
- MPK2F: floor-, ceiling- or wall-mounted; MPK2F-5: floor- or ceiling-mounted.

FS100 Controller

- Small, compact controller.
- 470 mm wide, 200 mm high, 420 mm deep.
- Designed for packaging and small parts handling robots with payloads of 20 kg and under.
- Compatible with integrated MotoSight™ 2D vision and conveyor tracking (optional).
- Improved communication speeds and functionality.
- High-speed I/O response and high-resolution timers.
- Open architecture enables software customization in widely accepted environments such as C, C++, C# and .NET.
- Uses same programming pendant hardware as DX100 controller, providing a consistent programming interface with current products.
- Enabled for MotoPick™ scheduling software.

MPK2F/MPK2F-5 ROBOTS

MPK2F robot shown
All dimensions are metric (mm) and for reference only. Please request detail drawings for all design/engineering requirements.



ROBOT SPECIFICATIONS

		MPK2F	MPK2F-5
Structure		Vertical articulated type	Vertical articulated type
Controlled Axes		5	5
Payload		2 kg (4.4 lbs)	5 kg (11 lbs)
Vertical Reach		1,625 mm (64")	1,551 mm (61.1")
Horizontal Reach		900 mm (35.4")	900 mm (35.4")
Repeatability		±0.5 mm (0.02")	±0.5 mm (0.02")
Maximum Motion Range	S-Axis (Lifting)	±170°	±170°
	L-Axis (Lower Arm)	±120°	±120°
	U-Axis (Upper Arm)	+282°/-102°	+60°/-102° *
	B-Axis (Wrist Pitch/Yaw)	±150°	±15°
	T-Axis (Wrist Twist)	±270°	±270°
Maximum Speed	S-Axis	320°/s	320°/s
	L-Axis	330°/s	330°/s
	U-Axis	330°/s	330°/s
	B-Axis	380°/s	380°/s
	T-Axis	2000°/s	2000°/s
Approximate Mass		72 kg (158.8 lbs)	72 kg (158.8 lbs)
Brakes		All axes	All axes
Power Rating		2.0 kVA	2.0 kVA
Allowable Moment	B-Axis	3.5 N · m	2.26 N · m
	T-Axis	1.5 N · m	0 N · m
Allowable Moment of Inertia	B-Axis	0.065 kg · m ²	0.065 kg · m ²
	T-Axis	0.012 kg · m ²	0.012 kg · m ²
Internal User I/O Cable		6 conductors	6 conductors
Internal User Air Line		2.5 mm ID (4)	2.5 mm ID (4)
Protection Class	Standard	IP67**	IP67**
	XP Version [†] (option)	N/A	N/A

* U-axis maximum motion range for ceiling-mounted MPK2F-5 is +240°/-60°

** With optional cleaning covers installed and wrist sealed

[†] XP Version: Yaskawa Motoman's eXtra Protection package

FS100 CONTROLLER SPECIFICATIONS[†]

Dimensions (mm)	470 (w) x 200 (h) x 420 (d) (18.5" x 7.9" x 16.5")
Approximate Mass	20 kg (44.1 lbs)
Cooling System	Direct cooling
Ambient Temperature	During operation: 0° to 40° C (32° to 104° F) During transit and storage: -10° to 60° C (14° to 140° F)
Relative Humidity	90% max. non-condensing
Primary Power Requirements	Single-phase or 3-phase power, 200/230 VAC at 50/60 Hz (MPP3, MPK2, MH6F, HP20F require 3-phase)
External Transformer (optional)	For 480/575 VAC installations
Digital I/O NPN-Standard PNP-Optional	Standard I/O: 16 inputs/16 outputs Max. I/O (optional): 168 inputs and 168 outputs
Position Feedback	Absolute encoder
Program Memory	JOB: 10,000 steps, 1,000 instructions CIO Ladder: 1,500 steps
Pendant Dim. (mm)	169 (w) x 314.5 (h) x 50 (d) (6.7" x 12.4" x 2")
Pendant Weight	.998 kg (2.2 lbs)
Interface	One Compact Flash slot; One USB port (1.1)
Pendant Playback Buttons	Teach/Play/Remote Keyswitch selector Servo On, Start, Hold, and Emergency Stop Buttons
Programming Language	INFORM III, menu-driven programming, MotoPlus SDK (C language) – optional
Maintenance Functions	Displays troubleshooting for alarms
Number of Robots/Axes	Up to 2 robots, maximum 16 axes (requires 2 controllers)
Multi Tasking	Up to 6 concurrent jobs, 1 system job
Fieldbus	All common networks supported
Ethernet	10 Base T/100 Base TX
Safety	Dual-channel Emergency Stop Pushbuttons, 3-position Enable Switch, Manual Brake Release

[†] See FS100 Controller data sheet (DS-509) for complete specifications

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