

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

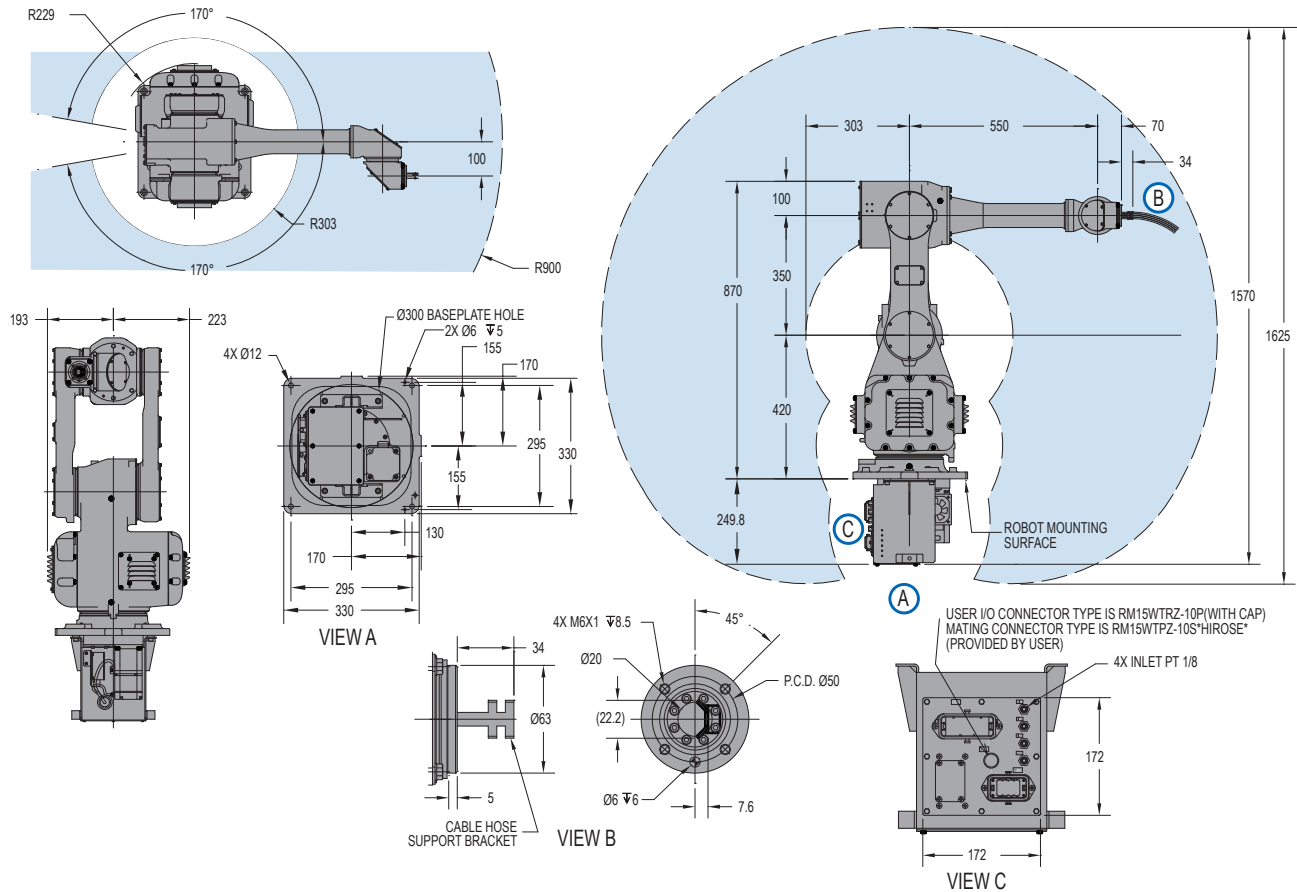
- Ideal for high-speed picking, kitting and cartoning of food and consumer goods.
- 900 mm horizontal reach provides largest work envelope in its class.
- Payload capacity for the MPK2F is 2 kg, the MPK2F-5 is 5 kg. Both models have ± 0.5 mm repeatability.
- Compact, slim arm design allows reach into 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 Consumption | | 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) |

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

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

www.motoman.com

YASKAWA AMERICA, INC. ■ MOTOMAN ROBOTICS DIVISION
100 AUTOMATION WAY, MIAMISBURG, OHIO 45342
TEL: 937.847.6200 ■ FAX: 937.847.6277

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