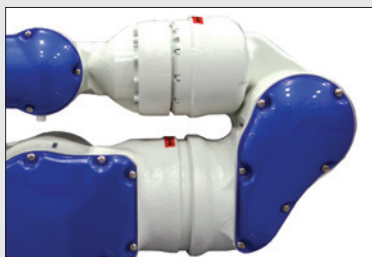


THRU-ARM CABLE AND HOSE ROUTING



FS100 CONTROLLER



OFFSET ELBOW EXPANDS  
WORK ENVELOPE

## TOP REASONS TO BUY

- Slim, 7-axis design optimizes space; provides “human-like” flexibility and range of motion, even in tight spaces
- Mounts virtually anywhere in any orientation
- Can be used in environments that are hazardous to humans
- Labor savings justifies capital investment
- Controlled by the small FS100 controller that can operate on single- or three-phase power



# SIA5F

ASSEMBLY • INJECTION MOLDING • INSPECTION  
MACHINE TENDING • PACKAGING • PART TRANSFER

**Payload: 5 kg**

## Compact, Lean and Powerful Arm

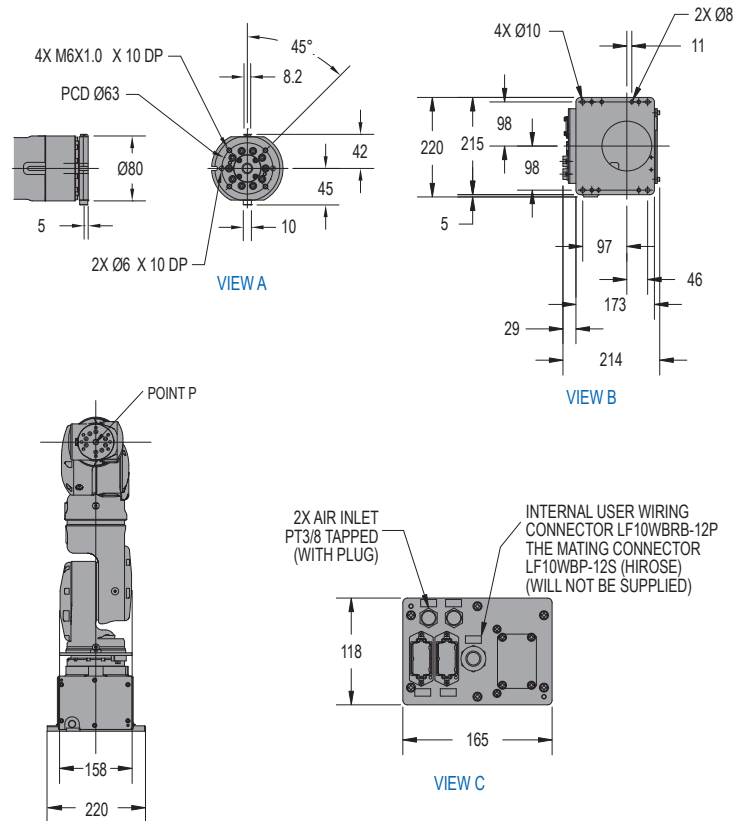
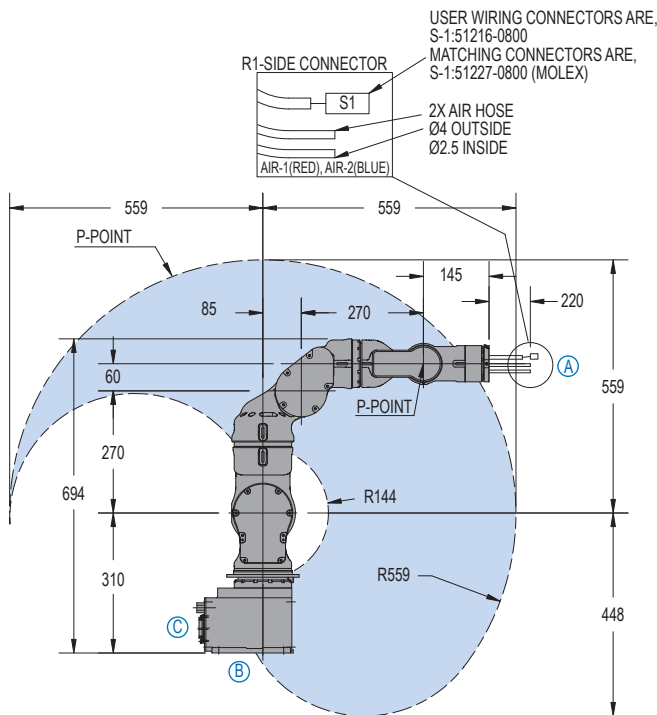
- 7-axis actuator-based design and best-in-class wrist performance characteristics provide amazing freedom of movement, coupled with ability to maneuver in very tight areas.
- Superior dexterity enables robot to reorient elbow(s) without affecting hand position or causing self-interference.
- Agile, versatile robot opens up a wide range of industrial applications to robots; ideal for assembly, injection molding, inspection, machine tending and a host of other operations.
- 5 kg payload; 1,007 mm vertical reach; 559 mm horizontal reach;  $\pm 0.05$  mm repeatability.
- Slim, compact and powerful – robot can straighten vertically to take up only one square foot of floorspace and is less than 220 mm wide at widest point.
- Short axis lengths and extreme motion flexibility allow slim manipulator to be positioned out of normal working area (i.e. floor-, ceiling-, wall-, incline- or machine-mounted) without limiting motion range of any axis.

## 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 (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.

# SIA5F ROBOT

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



## SIA5F SPECIFICATIONS

<b>Structure</b>		Articulated
<b>Mounting</b>		Floor, Wall or Ceiling
<b>Controlled Axes</b>		7
<b>Payload</b>		5 kg (11 lb)
<b>Vertical Reach</b>		1,007 mm (39.6")
<b>Horizontal Reach</b>		559 mm (22")
<b>Repeatability</b>		±0.06 mm (±0.002")
<b>Maximum Motion Range</b>	S-Axis (Turning/Sweep)	±180°
	L-Axis (Lower Arm)	±110°
	E-Axis (Elbow)	±170°
	U-Axis (Upper Arm)	+115 / -90°
	R-Axis (Wrist Roll)	±180°
	B-Axis (Bend/Pitch/Yaw)	±110°
	T-Axis (Wrist Twist)	±180°
<b>Maximum Speed</b>	S-Axis	200°/s
	L-Axis	200°/s
	E-Axis	200°/s
	U-Axis	200°/s
	R-Axis	200°/s
	B-Axis	230°/s
	T-Axis	350°/s
<b>Approximate Mass</b>		30 kg (66.2 lb)
<b>Power Rating</b>		1 kVA
<b>Allowable Moment</b>	R-Axis	14.7 N · m
	B-Axis	14.7 N · m
	T-Axis	7.35 N · m
<b>Allowable Moment of Inertia</b>	R-Axis	0.45 kg · m <sup>2</sup>
	B-Axis	0.45 kg · m <sup>2</sup>
	T-Axis	0.11 kg · m <sup>2</sup>
<b>Protection Class</b>	Standard	Not rated
	XP Version* (option)	N/A

\* XP Version: Yaskawa Motoman's eXtra Protection package

\*\* Through-hole wrist must be sealed

## FS100 CONTROLLER SPECIFICATIONS†

<b>Dimensions (mm)</b>	470 (w) x 200 (h) x 420 (d) (18.5" x 7.9" x 16.5")
<b>Approximate Mass</b>	20 kg (44.1 lbs)
<b>Cooling System</b>	Direct cooling
<b>Ambient Temperature</b>	During operation: 0° to 40° C (32° to 104° F) During transit and storage: -10° to 60° C (14° to 140° F)
<b>Relative Humidity</b>	90% max. non-condensing
<b>Primary Power Requirements</b>	Single-phase or 3-phase power, 200/230 VAC at 50/60 Hz (MPP3, MPK2, MH6F, HP20F require 3-phase)
<b>External Transformer (optional)</b>	For 460/575 VAC installations
<b>Digital I/O</b>	Standard I/O: 16 inputs/16 outputs NPN-Standard PNP-Optional
<b>Position Feedback</b>	Absolute encoder
<b>Program Memory</b>	JOB: 10,000 steps, 1,000 instructions C/O Ladder: 1,500 steps
<b>Pendant Dim. (mm)</b>	169 (w) x 314.5 (h) x 50 (d) (6.7" x 12.4" x 2")
<b>Pendant Weight</b>	.998 kg (2.2 lbs)
<b>Interface</b>	One Compact Flash slot; One USB port (1.1)
<b>Pendant Playback Buttons</b>	Teach/Play/Remote Keyswitch selector Servo On, Start, Hold, and Emergency Stop Buttons
<b>Programming Language</b>	INFORM III, menu-driven programming, MotoPlus SDK (C language) – optional
<b>Maintenance Functions</b>	Displays troubleshooting for alarms
<b>Number of Robots/Axes</b>	Up to 2 robots, 16 axes (requires 2 controllers)
<b>Multi Tasking</b>	Up to 6 concurrent jobs, 1 system job
<b>Fieldbus</b>	All common networks supported
<b>Ethernet</b>	10 Base T/100 Base TX
<b>Safety</b>	Dual-channel Emergency Stop Pushbuttons, 3-position Enable Switch, Manual Brake Release

Note: Use DX100 controller for arc welding applications.

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

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**YASKAWA**  
MOTOMAN ROBOTICS

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