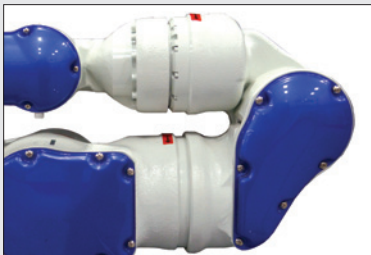




THRU-ARM CABLE AND HOSE ROUTING



FS100 CONTROLLER



OFFSET ELBOW EXPANDS WORK ENVELOPE



SDA5F

ASSEMBLY • PACKAGING • HANDLING • MACHINE TENDING • PART TRANSFER

Payload: 5 kg/arm

The SDA5F is a dual-arm, 15-axis robot designed for complex assembly and small part material handling applications. Both arms can work together dramatically simplifying end-of-arm tooling. Designed with patented servo actuators, all cables are routed through the arms. The FS100 is a powerful controller with unmatched open software architecture.

Slim, Dual-Arm Robot with "Human-Like" Flexibility

- Powerful actuator-based design provides "human-like" flexibility and fast acceleration.
- Superior dexterity and best-in-class wrist characteristics make slim, dual-arm robot ideally suited for assembly, part transfer, machine tending, packaging and other handling tasks that formerly could only be done by people.
- Highly flexible; 15 axes of motion (7 axes per arm, plus a single axis for base rotation).
- Internally routed cables and hoses (6 - air, 12 - electric) reduce interference and maintenance, and also make programming easier.
- 5 kg payload per arm; 845 mm horizontal reach per arm; 1,118 mm vertical reach per arm; ± 0.06 mm repeatability.
- Both robot arms can work together on one task to double the payload or handle heavy, unwieldy objects. Two arms can perform simultaneous independent operations.

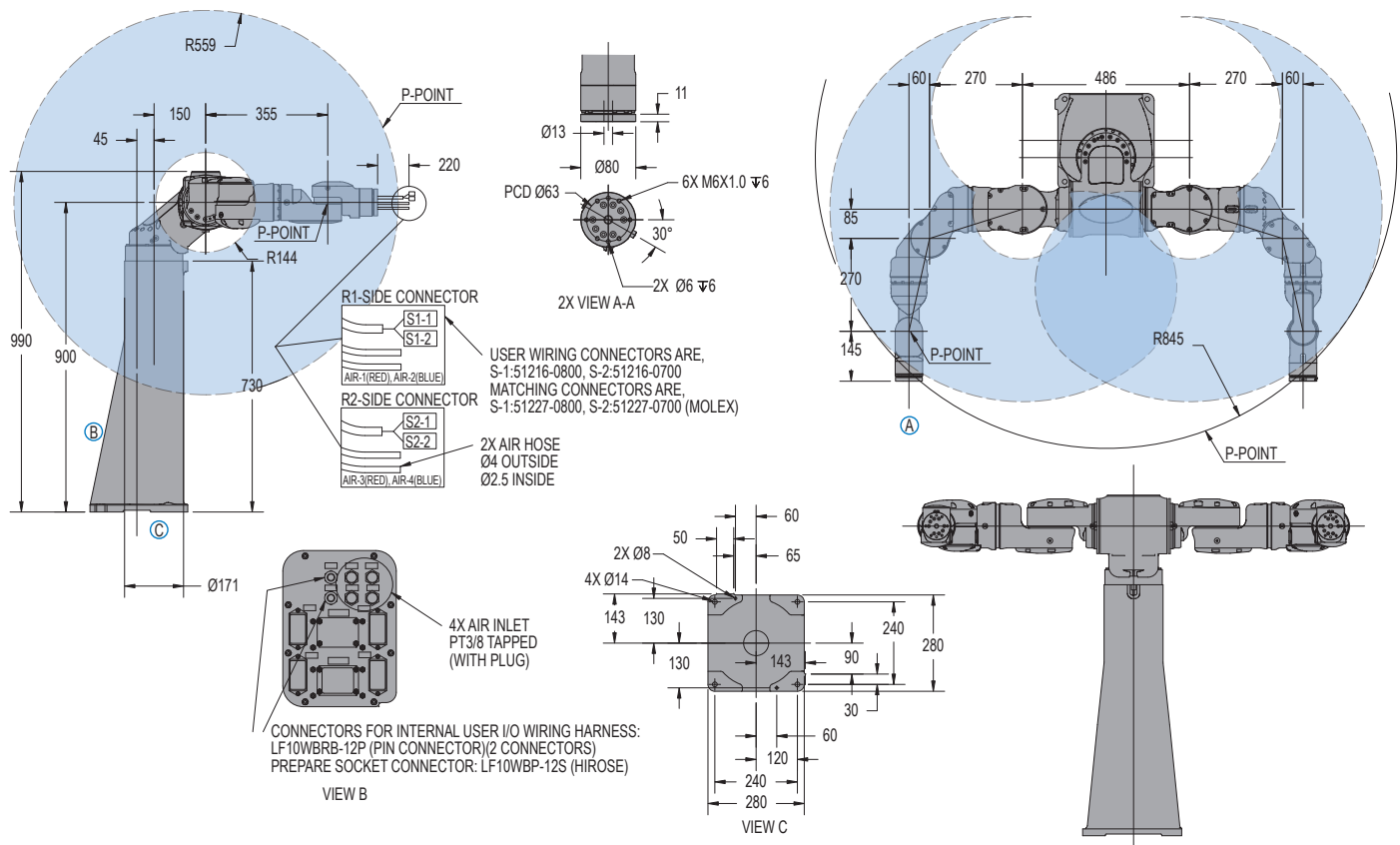
- Ability to hold part with one arm while performing additional operations with other arm and to transfer a part from one arm to the other with no need to set part down.

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.

TOP REASONS TO BUY

- Dexterity to perform complex tasks; dual 7-axis arms work together or independently
- Slim design optimizes space; provides "human-like" flexibility and range of motion, even in tight spaces
- Simplified tooling reduces cost
- 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



SDA5F SPECIFICATIONS		
Structure	Articulated	
Mounting	Floor *	
Controlled Axes	15 (7 axes per arm plus base rotation)	
Payload	5 kg (11 lbs)/arm	
Horizontal Reach per Arm	845 mm (33.3")	
Horizontal Reach (P-point to P-point)	1,690 mm (66.5")	
Vertical Reach	1,118 mm (44")	
Repeatability	±0.06 mm (±0.003")	
Maximum Motion Range	Rotation-Axis (Waist)	±170°
	S-Axis (Lifting)	+270° / -90°
	L-Axis (Lower Arm)	±110°
	E-Axis (Elbow)	±170°
	U-Axis (Upper Arm)	+115° / -90°
	R-Axis (Upper Arm Twist)	±180°
	B-Axis (Wrist Pitch/Yaw)	±110°
	T-Axis (Wrist Twist)	±180°
Maximum Speed	Rotation-Axis (Waist)	180°/s
	S-Axis (Lifting)	200°/s
	L-Axis (Lower Arm)	200°/s
	E-Axis (Elbow)	200°/s
	U-Axis (Upper Arm)	200°/s
	R-Axis (Upper Arm Twist)	200°/s
	B-Axis (Wrist Pitch/Yaw)	230°/s
	T-Axis (Wrist Twist)	350°/s
Approximate Mass	110 kg (242.6 lbs)	
Power Rating	1.5 kVA	
Allowable Moment	R-Axis	14.7 N • m
	B-Axis	14.7 N • m
	T-Axis	7.35 N • m
Allowable Moment of Inertia	R-Axis	0.45 kg • m ²
	B-Axis	0.45 kg • m ²
	T-Axis	0.11 kg • m ²
Protection Class	Standard	Not rated
	XP Version** (option)	N/A

* Ceiling mounting available with successful application review
 ** 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, 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

Note: Use DX100 controller for arc welding applications.
 † See FS100 Controller data sheet (DS-509) for complete specifications