

MACHINE TENDING



THRU-ARM CABLE AND HOSE ROUTING



FS100 CONTROLLER

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



SDA20F

ASSEMBLY • HANDLING • MACHINE TENDING • PACKAGING • PART TRANSFER

Payload: 20 kg/arm

The SDA20F is a dual-arm, 15-axis robot designed for complex assembly and material handling applications. Both arms can work together dramatically simplifying end-of-arm tooling. 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.
- 20 kg payload per arm; 910 mm horizontal reach per arm; 1,820 mm vertical reach per arm; ±0.1 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.

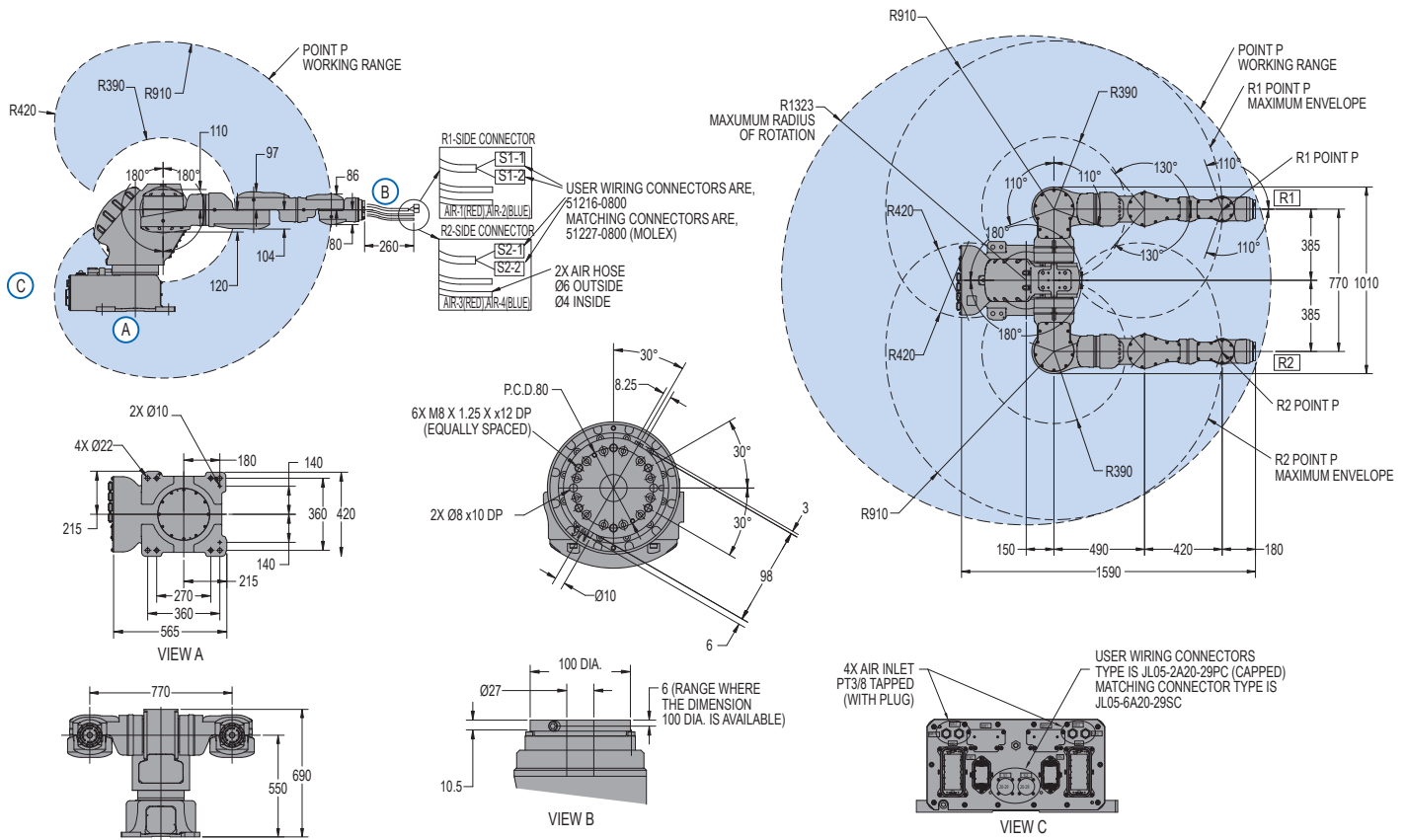
- Ability to hold part with one arm while performing additional operations with other arm and to transfer a part from one arm to the other with no need to set part down.

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.

SDA20F ROBOT

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



SDA20F SPECIFICATIONS

Structure	Articulated	
Mounting	Floor	
Controlled Axes	15 (7 axes per arm plus base rotation)	
Payload	20 kg (44.1 lbs)/arm	
Horizontal Reach per Arm	910 mm (35.8")	
Horizontal Reach (P-point to P-point)	2,590 mm (102")	
Vertical Reach	1,820 mm (71.7")	
Repeatability	±0.1 mm (±0.004")	
Maximum Motion Range	Rotation-Axis (Waist)	±180°
	S-Axis (Lifting)	±180°
	L-Axis (Lower Arm)	±110°
	E-Axis (Elbow)	±170°
	U-Axis (Upper Arm)	±130°
	R-Axis (Upper Arm Twist)	±180°
	B-Axis (Wrist Pitch/Yaw)	±110°
T-Axis (Wrist Twist)	±180°	
Maximum Speed	Rotation-Axis	125°/s
	S-Axis	130°/s
	L-Axis	130°/s
	E-Axis	170°/s
	U-Axis	170°/s
	R-Axis	200°/s
	B-Axis	200°/s
T-Axis	400°/s	
Approximate Mass	380 kg (837.9 lbs)	
Power Consumption	4.4 kVA	
Allowable Moment	R-Axis	58.8 N • m
	B-Axis	58.8 N • m
	T-Axis	29.4 N • m
Allowable Moment of Inertia	R-Axis	4 kg • m ²
	B-Axis	4 kg • m ²
	T-Axis	2 kg • m ²

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

Note: Use DX100 controller for welding applications.

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

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