Product Information
EBG 209-EN

MITSUBISHI ELECTRIC
FACTORY AUTOMATION

RV-2SDB

Industrial Robots

Flexibility delivered fast

Fit productivity into any work cell

COMPACT	Arm construction fits restrictive work cells
PRODUCTIVE	10 % faster than previous designs
INTEGRATED	Compatible with other Mitsubishi automation system components
EASY SET-UP	Powerful software tools cover simulation, machine vision and control

Performance for any application

The RV-2SDB is designed to fit any application

We have your solution

Mitsubishi Electric is pleased to introduce the RV-2SDB, a high performance robot with geometry designed to provide the necessary agility to fit into almost any work cell. It is the latest in a long line of industry leading designs, developed with the expertise of almost 30 years in the industrial robot market. This has lead to a robot that doesn't believe short cycle times and precise manipulation are exclusive goals.

Good in a tight spot

The RV-2SDB uses an innovative geometry to allow exceptional agility even in limited spaces. This means it is readily adaptable to small work cells with few modifications required. For new designs, the space saving capabilities mean reduced cost, both in terms of materials and floor space.

Maximum positioning flexibility makes the most of any work space

Key to the RV-2SDB's agility is an arm design that even allows access to the area immediately surrounding the base, making the maximum use of the surrounding space. This is further enhanced by a ±240 degree reach, meaning no parts of the surroundings are inaccessible. A ceiling or wall mount capability and compact wrist design complete the picture.

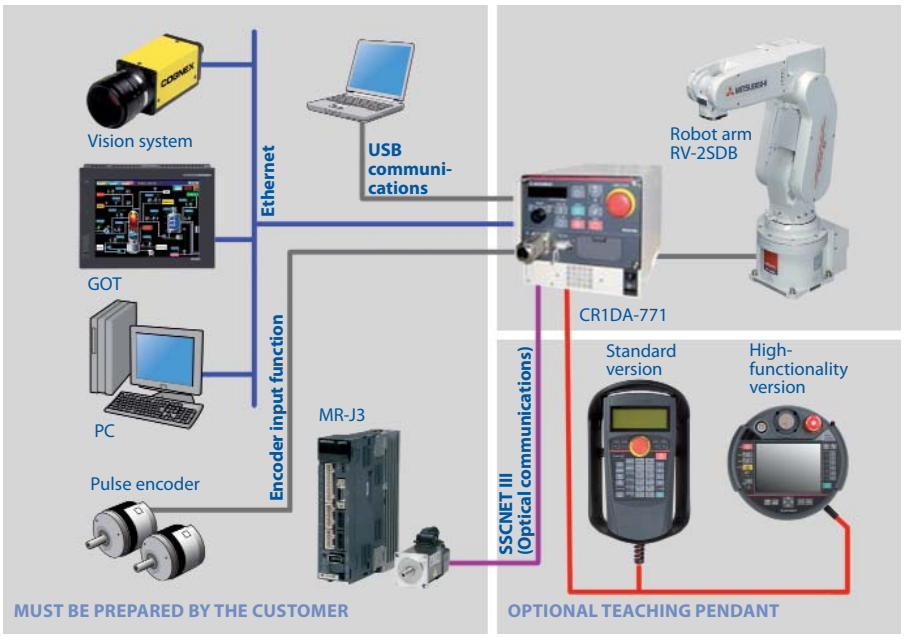
Increased productivity

While agility is a key benefit, to provide an effective solution it needs to be combined with performance. The RV-2SDB delivers on this requirement with axis performance that is up to 10 % faster than previous designs while carrying a versatile 2 kg (3 kg in wrist down position) load. This all adds up to a maximum combined speed of 4,400 mm/sec. Hence cycle times can be kept to the minimum for increased productivity. Despite this rapid cycling capability, the robot does not sacrifice positional repeatability, allowing precise manipulation of assemblies and work pieces down to ±0.02 mm. So finally, the RV-2SDB delivers both dependable productivity and quality day after day.

Choose an RV-2SDB installation for rapid payback

Simple system integration

True to Mitsubishi's position as a full source automation partner, the RV-2SDB is easily integrated with a variety of our other automation system components. For example, the GOT HMI can communicate via an Ethernet link to the robot controller. This allows operation panels to be easily configured using the GOT alone, saving development and system cost. Further, the robot's standard SSCNET III interface allows an MR-J3-B servo axis to be controlled directly over a high performance, noise free optical link. Additionally, the controller's two encoder inputs provide easy tracking of conveyor belts or other moving parts of a work cell. Finally, for applications requiring machine vision capabilities, the RV-2SDB controller's Ethernet link also allows cameras such as those supplied by e-F@ctory Alliance partner Cognex to be integrated easily.

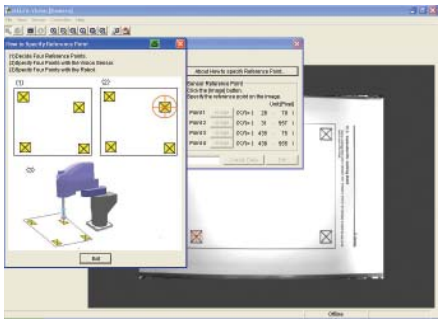


The RV-2SDB is easy to integrate into almost any application

Powerful software tools

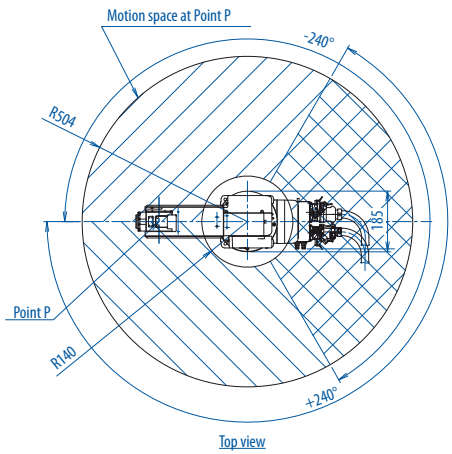
The RV-2SDB also benefits from a comprehensive suite of software tools to simplify the tasks of system design and validation while minimizing engineering hours. RT Toolbox 2 provides the main tools for programming the robot system, debugging and planning optimum cycle times for maximum productivity.

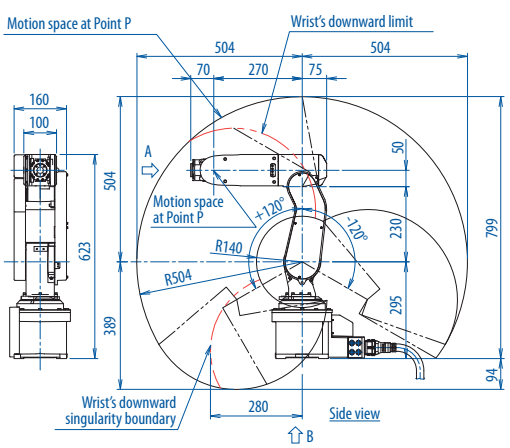
MELFA-Works can take existing system design data from CAD software such as SolidWorks and use this to accurately simulate the operation of work cells and systems. This ensures potential problems are caught and addressed before expensive fabrication work discovers them. Finally, MELFA Vision provides the necessary tools to integrate third party vision systems such as those from Cognex. Standard features include calibration and vision templates as well as the detection of moving and rotated parts.

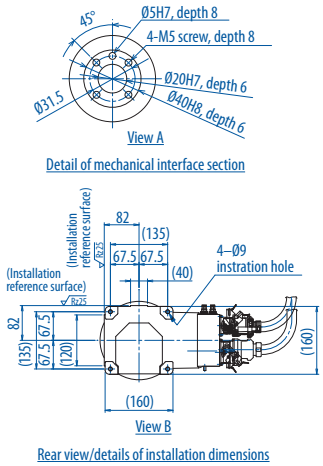


Powerful software tools reduce engineering and project lead times

Motion envelope







All dimensions in mm

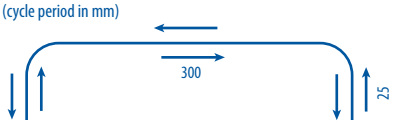
Specifications ///

Controller			CR1DA-771 (RV-2SDB)	Remark
Robot language			MELFA-BASIC V	
Position teaching method			Teaching method, MDI method	
External input/output	Input/output	Point	0 input/0 output (maximum 256/256, available as option)	
	Dedicated input/output	Point	Assigned according to general-purpose I/O.	
	Hand open/close input/output	Point	4 inputs/0 output	4 additional outputs are available as option.
	External emergency shutdown input	Point	1	Double-redundant
	Door switch input	Point	1	Double-redundant
	Enabling device input	Point	1	Double-redundant
	Synchronization of additional axes	Point	1	Double-redundant
	Mode output	Point	1	Double-redundant
	Error output	Point	1	Double-redundant
Interface	RS-232	ports	1	Extensions for computer, vision sensor, etc.
	Ethernet	ports	1	10BASE-T/100BASE-TX
	USB	ports	1	Device function only, mini-B terminal
	Additional-axis I/F	channels	1	SSCNET III
	Tracking I/F	channels	1	For connecting two encoders
	Slot for hand	slots	1	Slot dedicated to air hand I/F
	Extension slot	slots	1	For installing optional I/F
Power supply	Input voltage range	V	Single phase, AC200 to 230 ±10 % (180 to 253)	
	Power capacity	kVA	0.5	Not including in-rush current
	Frequency	Hz	50/60	
Environmental temperature		°C	0–40	
Performance Level (PL)			d	
Degree of cleanliness ISO			7	
External dimensions (WxHxD)		mm	240x200x290	Protrusions excluded
Weight		kg	Approx. 9	
Structure			Self-contained floor type/ open structure (IP20)	

Robot			RV-2SDB
Protection class			IP30
Installation			Floorstanding, ceiling-hung or wall-mounted①
Structure			Vertical articulated arm robot
Degrees of freedom			6
Arm length		mm	230+270
Maximum reach radius		mm	504
Maximum composite speed		mm/s	4,400
Cycle time			On the order of 0.6 sec. ②
Mass load capacity	Rated	kg	2.0
	Maximum	kg	3.0 (wrist, downward)
Position repeatability		mm	±0.02
Mass		kg	19

① With limitation on J1 axis for wall mounting

② **Pick and place**
(cycle period in mm)



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