

IRB 5400

High performance paint process robot



A highly efficient paint robot with high acceleration, high load capacity, large work envelope and integrated process equipment. It saves cycle time and it saves paint.

A powerful workhorse

The IRB 5400 is a unique paint robot with high acceleration and speed, combined with the ability to carry heavy loads. It gives you short cycle times and increased production. The extensive load capacity enables us to put the process equipment close to the applicator to reduce waste.

Add a rail for coating large objects

The IRB 5400 can be mounted on a trolley for operating on a rail. There are two types of foot for the trolley. The clean wall foot is used when the trolley and rail is located outside the spray booth. This enables for an easy-to-clean inner spray booth wall. The in-booth foot enables the complete rail and trolley to be located inside the spray booth. This design is typically used for retrofit in existing spray booths or for spray booths with limited space.

Paint robot control system

The IRB 5400 uses the IRC5P paint robot control system. It is specifically designed for the paint shop with its user friendly Ex FlexPaint Pendant and RobView 5 - our paint cell software for supervision, control and diagnostics, and our powerful software tools for off-line programming and process tuning.

Powered by IPS

The integrated process system (IPS) integrates the paint application equipment in the robot arm. With color change valves and paint pumps close to the paint wrist, the result is reduced material consumption and significant paint savings. Air- and fluid regulation, pilot valves, flow sensors, bell speed and high voltage control are also integrated in the robot, making installation, set up and process tuning fast and easy.

Flexible rail system

The rails are designed for minimum disturbance of the air flow and are available in 1.5 and 2.0 m modules that combine to the desired length, up to 15 meters (standard). One or two robots can be mounted on one rail.



Specification

Robot version	Payload (kg)	Vertical arm load (kg)	Horizontal arm load (kg)
IRB 5400	25	65	70*
Number of axes	6 axes, 7 axes when rail-mounted		
Protection	IP67, wrist IP54		
Mounting	Floor, Rail		
Controller	IRC5 Paint		
Ex classification	II 2 G Ex ib px IIB T4, II 2 D Ex pD 21 T80°C, FM Class I,II. Div.1, Group C,D,G 135°C		

* Including wrist payload.

Performance

IRB 5400

Static repeatability	0.15 mm
Path accuracy	±3.0 mm
Velocity	1.50 m/s

Technical information

Electrical Connections

Main voltage	200-600 VAC, 3 phase, 50/60 Hz
Transformer rating	Stand by <300 W, production 700-1500 W

Electrical safety Meets international standards

Physical

Robot footprint	660 x 750 mm (standard foot) 660 x 775 mm (riser foot) 633 mm x 2 - 15 m length* (rail)
Robot unit height (w/o foot)	2070 mm
Standard foot height	190 mm
Riser foot height	540 mm
Clean wall rail foot height	700 mm
In-booth rail foot height	1125 mm
Vertical arm length	1200 mm
Horizontal arm length	1620 mm
Robot weight - standard foot	970 kg
Robot weight - riser foot	1060 kg
Controller footprint	1450 x 725 x 710 mm
Controller weight	180 - 200 kg

Environment

Ambient temperature for robot manipulator	+5°C (41°F) up to +45°C (113°F)
Ambient temperature for robot controller	Max. +48°C
Relative humidity	Max. 95%
Safety	Double circuits with supervision, emergency stops and safety functions, 3-position enable device
Emission	EMC/EMI-shielded

* Longer rail lengths on request.

Data and dimensions may be changed without notice.

PC Tools and Interface

PC tools

RobView 5 (included)	Paint cell supervision & operation
ShopFloor Editor	Offline editing & process tuning
RobotStudio® Paint	3D offline simulation & program

Controller interfaces

I/O boards	Analog, digital, relay, 120VAC, encoder & process I/O boards
Max. TCP velocity	Interbus-S, ProfiBus, Profinet, CC Link, DeviceNet & Ethernet IP

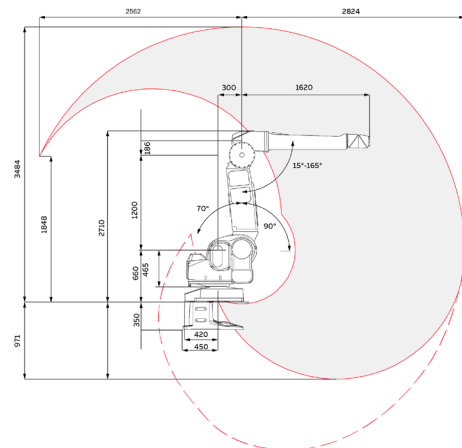
Network Ethernet FTP/NFS

Movement

Axis movement	Working range	Maximum speed
Axis 1 rotation	300° 170° with riser foot	137°/s
Axis 2 vertical arm	160°	137°/s
Axis 3 horizontal arm	150°	137°/s
Axis 4 inner wrist	Unlimited	465°/s
Axis 5 wrist bend	Unlimited	350°/s
Axis 6 wrist turn	Unlimited*	535°/s
Total wrist bend	± 140°	

* Only limited by the hoses.

Working range, IRB 5400-12 slim arm



Working range, IRB 5400-22 process arm

