

IRB 5400-22 Process Robot

Enhanced IRB 5400



ABB's Cycle Time Saver

The IRB 5400-22 Process Robot is an enhanced version of the efficient Paint Process Robot IRB 5400-02. What makes this Paint Robot so superior and unique is the cycle time savings you as a user will gain. The extensive work-envelope combined with the unique, increased acceleration and the increased capacity both on the wrist and the counter-balance, has made this Paint Robot fully earn the name Cycle Time Saver.

Process Solution

The IRB 5400-22 Process Robot has integrated color change valves, pumps, flow sensors, air and paint regulators, high-voltage controller and bell rotation controller. This ensures high finish quality and significant paint savings.

High Uptime

ABB's powerful software package CAP (Computer Aided Painting), including the ShopFloor Editor, allows easy programming and process tuning without interrupting production. Flexible communication interfaces make it easy to adapt to any painting requirement.

Easy Maintenance

The design of the vertical arm and its electronics is extremely easy to access and service. For fast and easy diagnostics LED signals can be read without removing any covers. There is less field connections and ample direct access to all components.

High Finish Quality

ABB's exclusive Integrated Process System (IPS) provides closed loop regulation, high speed and control for paint and air flow adjustments. This minimizes over-spray, secures uniform film build, maximizes finish quality as well as paint and solvent savings. The robot enables high quality while reducing cost and protecting the environment.

Shake hands with the world's best paint wrist

The area of the hollow wrist's internal opening has been doubled and the payload capacity increased by more than 65%. This enables heavy atomizers or two-atomizer systems to operate with high acceleration and speed, reducing cycle time and maintaining an even film build.



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TECHNICAL DATA, IRB 5400-22

SPECIFICATION

Payload on wrist	25 kg
Handling cap. on vertical arm	65 kg
Handling cap. on horizontal arm (incl. wrist)	70 kg
Number of axes	6
Axis movements:	
Axis:	Working range: Max. speed:
Rotation	300° / 170° with riser foot 137°/s
Vertical arm	160° 137°/s
Horizontal arm	150° 137°/s
Inner wrist	Unlimited 440°/s
Wrist bend	Unlimited 430°/s
Outer wrist	920° 600°/s
Pose accuracy (Repeatability)	0,15 mm
Path accuracy	+/ - 3 mm
Pose accuracy	0,1 mm
Velocity	1,5 m/s

ELECTRICAL CONNECTION

Supply voltage	200-600 V, 50-60 Hz
	Transformer included
Power consumption	Stand by < 300 W
	Production 1500 W
	Peak 5000 W

PHYSICAL

Robot unit mounting	Floor
Dimensions:	
Robot foot print:	
Standard foot unit	660 X 750 mm
Riser foot unit	660 X 775 mm
Robot main axes:	
Base	H 660, Ø 1130 mm
Vertical arm	L 1200 mm
Horizontal arm	L 1620 mm
Robot Controller compact version	1250 x 800 x 580 mm
Robot Controller extended version	2200 x 800 x 580 mm
Weight:	
Process Robot excl. foot unit	820 kg
Standard foot unit	150 kg
Riser foot unit	240 kg
Robot Controller compact version	max 320 kg
Robot Controller extended version	max 350 kg

ENVIRONMENT

Explosion protection:	
North America	Class I, II. Division 1, Group C, D, G, 135°C
Japan	II G T4
Europe	II 2 G D (T65°C)
EMC	Electro Magnetic Compatibility approved
Ambient temperature	Robot unit 5-45°C
	Robot Controller 5-52°C
Relative humidity	Non condensing max. 95%
Degree of protection	Protection standards IEC 529
	Robot Unit IP 67
	Wrist IP 54
	Robot Controller IP 54

USER INTERFACES

Operator panel	In cabinet or external
Programming unit	Exi protected. Portable, joystick and keyboard
	Display 16 lines * 40 characters
	Graphical 240 * 320 pixels
	Distributed intelligence
	Configurable on-screen menus
Safety	EMY stop, Enable device, General mode stop, Auto mode stop, Test mode stop, Cabin interlock

MACHINE INTERFACES

Digital inputs/outputs	512/512
Analog inputs/outputs	24/16
Fieldbuses	Interbus-S 64/64 Allan Bradley RIO 128/128 Profibus DP 128/128 CC Link 128/128
Serial Channels	RS-232, RS-422, RS-485
Network	Ethernet NFS/FTP Client RAP Robot Application Control FactoryWare interface High speed IPS link Real Time Data Logger DDE Server
Diskette drive	3,5" MS-DOS format (option)

ROBOTWARE

OS	Robot Operating System, multitasking capability
RAPID	Powerful application programming language
Conveyor tracking	Accurate synchronisation of robotic motion, paint process regulation and the moving part for both linear and circular tracking in any direction.

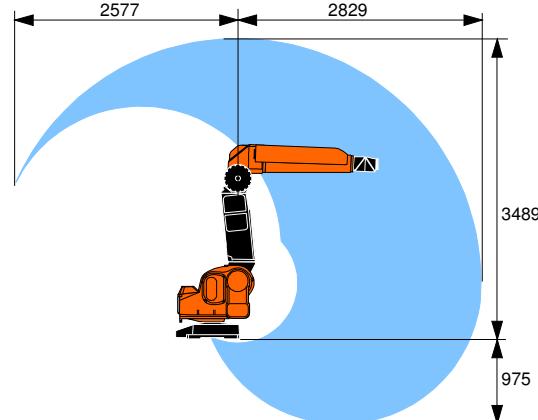
IPS

Integrated Process System. Unique system for closed loop regulation and high speed control for paint and air flow adjustments. Based on open, flexible and adjustable architecture philosophy.

PC TOOLS

CAP	A Computer Aided Painting Package containing ShopFloor Editor and RobView.
ShopFloor Editor	Off-Line editing of programs using 3D graphics for path and process tuning. Graphical programming and tuning of colour change sequences.
RobView	Monitoring of robots and processes while in production. Easy design of user screens.
FlexUI	Custom built GUI application for system super-vision and control, based on standard ABB.

WORK ENVELOPE



Data and dimensions may be changed without notice.