ABB IRB140 Industrial Robot datasheet

Compact, powerful IRB 140 industrial robot.
Six axis multipurpose robot that handles payload of 6 kg,
with long reach (810 mm). The IRB 140 can be floor mounted,
inverted or on the wall in any angle. Available as Standard,
Foundry Plus 2, Clean Room and Wash versions, all mechanical
arms completely IP67 protected, making IRB 140 easy to
integrate in and suitable for a variety of applications. Uniquely
extended radius of working area due to bend-back mechanism
of upper arm, axis 1 rotation of 360 degrees even as
wall mounted.

IRB 140
Industrial Robot

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Main Applications
Arc welding
Assembly
Cleaning/Spraying
Machine tending
Material handling
Packing
Deburring

Small, Powerful and Fast
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The compact, robust design with integrated cabling adds to overall flexibility. The Collision Detection option with full path retraction makes robot reliable and safe.

Using IRB 140T, cycle-times are considerably reduced where axis 1 and 2 predominantly are used.

Reductions between 15-20 % are possible using pure axis 1 and 2 movements. This faster versions is well suited for packing applications and guided operations together with PickMaster.

IRB 140 Foundry Plus 2 and Wash versions are suitable for operating in extreme foundry environments and other harch environments with high requirements on corrosion resistance and tightness. In addition to the IP67 protection, excellent surface treatment makes the robot high pressure steam washable. Also available in white Clean Room ISO class 6 version, making it especially suited for environments with stringent cleanliness standards.
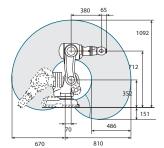
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IRB 140

Specification

Robot versions	Handling capacity	Reach of 5th axis	Remarks
IRB 140/IRB 140T	6 kg	810 mm	
IRB 140F/IRB 140TF	6 kg	810 mm	Foundry Plus 2 Protection
IRB 140CR/IRB 140TCR	6 kg	810 mm	Clean Room
IRB 140W/IRB 140TW	6 kg	810 mm	SteamWash Protection

Supplementary load (on upper arm alt. wrist)	
on upper arm	1 kg
on wrist	0.5 kg

Number of axes	
Robot manipulator	6
External devices	6

Integrated signal supply	12 signals on upper arm
Integrated air supply	Max. 8 bar on upper arm
IRC5 Controller variants:	Single cabinet, Dual cabinet, Compact, Panel mounted

Performance

Position repeatability 0.03 mm (average result from ISO test)

Axis movement	Axis	Working range
	1	360°
	2	200°
	3	280°
	4	Unlimited (400° default)
	5	230°
	6	Unlimited (800° default)

Max. TCP velocity	2.5 m/s
Max. TCP acceleration	20 m/s²
Acceleration time 0-1 m/s	0.15 sec

Velocity *)

Axis no.	IRB 140	IRB 140T
1	200°/s	250°/s
2	200°/s	250°/s
3	260°/s	260°/s
4	360°/s	360°/s
5	360°/s	360°/s
6	450°/s	450°/s

*) Max velocity is reduced at single phase power supply, e.g. Compact controller. Please, see the Product specification for further details.

Cycle time

5 kg Picking side	IRB 140	IRB 140T
cycle 25 x 300 x 25 mm	0.85s	0.77s

Electrical Connections

Supply voltage	200–600 V, 50/60 Hz
Rated power	
Transformer rating	4.5 kVA
Power consumption typicly	0.4 kW

Physical

Robot mounting	Any angle
Dimensions	
Robot base	400 x 450 mm
Robot controller H x W x D	950 x 800 x 620 mm
Weight	
Robot manipulator	98 kg

Environment

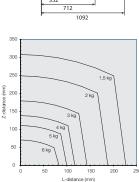|	
Ambient temperature for	
Robot manipulator	5 – 45°C
Relative humidity	Max. 95%
Degree of protection,	
Manipulator	IP67
Options	Foundry Plus 2
	SteamWash
	(High pressure steam washable)
	Clean Room, class 6
	(certified by IPA)
Noise level	Max. 70 dB (A)
Safety	Double circuits with supervision, emergency stops and safety functions, 3-position enable device
Emission	EMC/EMI-shielded

Data and dimensions may be changed without notice

Working range

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