



IRB 140

Industrial Robot

MAIN APPLICATIONS

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



Small, Powerful and Fast

Compact, powerful the IRB 140 industrial robot. Six axis multipurpose robot comprising the IRB 140 manipulator and IRC 5 industrial robot controller. Handles payload of 5kg, (11 lbs.) with long reach (810 mm/31.8 in.) of axis 5, optional floor, wall and suspended mounting. Available as Standard, Foundry, 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 and flexible mounting capabilities.

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

Using the 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 Foundry Plus and Wash versions are suitable for operating in extreme foundry environments and other harsh environments with demanding requirements on corrosion resistance and tightness. In addition to the IP67 protection, excellent surface treatment makes the robot high pressure steam washable. The white-finish Clean Room version meets Clean Room class 10 regulations, making it especially suited for environments with stringent cleanliness standards.

The IRC 5 controller has the electronics for controlling the robot manipulator, external axes and peripheral equipment. The IRC 5 also contains system software with all basic functions for operating and programming, including two built-in Ethernet channels with 100 Mbit/s capacity. This ensures a significant increase in computing power as well as improved controller monitoring and supervision.

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TECHNICAL DATA, IRB 140 INDUSTRIAL ROBOT

SPECIFICATION

Robot versions	Handling capacity	Reach of 5th axis	Remarks	Standard colour
IRB 140/IRB 140T	5 kg	810 mm		Orange
IRB 140F/IRB 140TF	5 kg	810 mm	Foundry Plus Protection	Orange
IRB 140CR/IRB 140TCR	5 kg	810 mm	Clean Room,	White
IRB 140W/IRB 140TW	5 kg	810 mm	Wash Protection	White
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		

PERFORMANCE

Position repeatability	0.03 mm (average result from ISO test)	
Axis movement		
Axis	Working range	
1, C Rotation	360°	
2, B Arm	200°	
3, A Arm	280°	
4, D Wrist	Unlimited (400° default)	
5, E Bend	240°	
6, P Turn	Unlimited (800° default)	
Max. TCP velocity	2.5 m/s	
Max. TCP acceleration	20 m/s ²	
Acceleration time 0-1 m/s	0.15 sec	

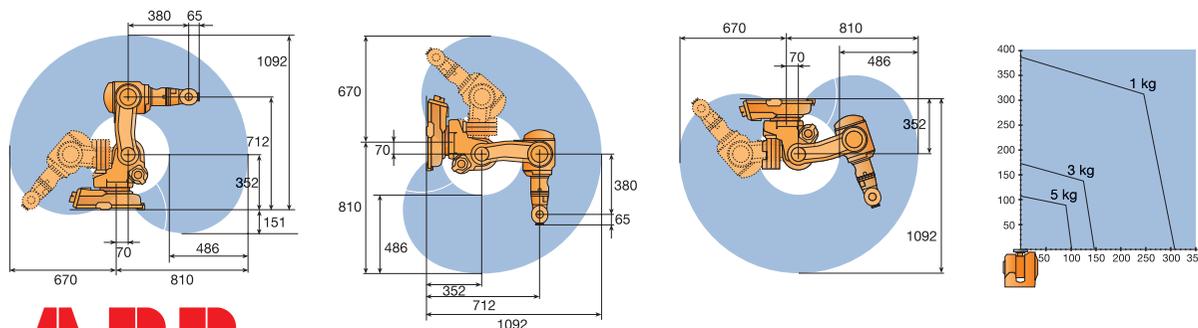
VELOCITY

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

CYCLE TIME

5 kg Picking side cycle 25 x 300 x 25 mm	IRB 140	IRB 140T
	0,85s	0,77s

WORKING RANGE AND LOAD DIAGRAM



ABB

ABB Inc.
1250 Brown Rd.
Auburn Hills, MI 48326
Phone: 248-391-9000
Fax: 248-391-7390

ABB Inc.
201 West Creek Blvd.
Brampton, Ontario L6T 5S6
Phone: 905-460-3000
Fax: 905-460-3001

ELECTRICAL CONNECTIONS

Supply voltage	200–600 V, 50/60 Hz
Rated power	
Transformer rating	4.5 kVA

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
Robot controller	250 kg

ENVIRONMENT

Ambient temperature	
Robot manipulator	5 – 45°C (41 – 113°F)
Robot controller	5 – 52°C (41 – 125°F)
Relative humidity	Max. 95%

Degree of protection, Manipulator	IP67
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Foundry/Wash Clean Room	High pressure steam washable Class 10 (Federal Standard)/ class 4 (ISO)
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Noise level	Max. 70 dB (A)
Safety	Double circuits with supervision, emergency stops and safety functions, 3-position enable device

Emission	EMC/EMI-shielded
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Data and dimensions may be changed without notice

