

## IRB 140

### Small, powerful, and fast 6-axes robot



Compact and very powerful. The IRB 140 six axes multipurpose industrial robot handles a payload of 6 kg with a reach of 810 mm (to axis 5) It can be floor mounted, inverted or wall mounted at any angle. The robust design with fully integrated cables adds to the overall flexibility and the collision detection function ensures the robot is reliable and safe.

#### Small, powerful and fast

The compact, powerful IRB 140 industrial robot is a 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.

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

When 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 version 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 harsh 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.

#### Main applications

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

## Specification

Robot version	Reach of 5th axis (m)	Handling capacity (kg)	Supplementary load: - on upper arm (kg) - on wrist (kg)	
IRB 140/ IRB 140T	0.8	6	1	0.5
IRB 140F/ IRB 140TF	0.8	6	1	0.5
IRB 140CR/ IRB 140TCR	0.8	6	1	0.5
IRB 140W/ IRB 140TW	0.8	6	1	0.5
Number of axes	6			
Protection	IP67, IRB 140F/IRB 140TF: Foundry Plus 2, IRB 140CR/IRB 140TCR: Clean Room, IRB 140W/IRB 140TW: SteamWash			
Mounting	Any angle			
Controller	IRC5 Compact/IRC5 Single Cabinet/ IRC5 PMC Panel Mounted			
Integrated signal supply	12 signals on upper arm			
Integrated air supply	Max. 8 bar on upper arm			

## Technical information

### Electrical Connections

Supply voltage	200-600 V, 50/60 Hz
Rated power transformer rating	4.5 kVA
Power consumption	0.4 kW

### Physical

Robot base	400 x 450 mm
Robot controller	950 x 800 x 620 mm
Robot manipulator weight	98 kg

### Environment

Ambient temperature for robot manipulator	
During operation	+5° C (41° F) to + 45° C (113° F)
Relative humidity	Max. 95%
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 supervisions, emergency stops and safety functions. 3-position enable device
Emission	EMC/EMI shielded

Data and dimensions may be changed without notice.

## Performance (according to ISO 9283)

	IRB 140	IRB 140T
5 kg picking side		
25 x 300 x 25 mm	0.85 s	0.77 s
Max. TCP velocity	2.5 m/s	2.5 m/s
Max. TCP acceleration	20 m/s <sup>2</sup>	20 m/s <sup>2</sup>
Acceleration time 0-1 m/s	0.15 s	0.15 s
Position repeatability	0.03 mm	0.03 mm

## Movement

Axis movement	Working range	Velocity* IRB 140	Velocity* IRB 140T
Axis 1 rotation	+360°	200°/s	250°/s
Axis 2 arm	+200°	200°/s	250°/s
Axis 3 arm	+280°	260°/s	260°/s
Axis 4 wrist	Unlimited (Default: 400°)	360°/s	360°/s
Axis 5 bend	+230°	360°/s	360°/s
Axis 6 turn	Unlimited (Default: 800°)	450°/s	450°/s

\* Max. velocity is reduced at single phase power supply, e.g. Compact controller.

## Working range

