

IRB 140 Industrial Robot

Main Applications

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



Small, Powerful and Fast

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, FoundryPlus, 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 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 Foundry Plus 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. The white-finish Clean Room version meets Clean Room class 10 regulations, making it especially suited for environments with stringent cleanliness standards.

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 Protection |
| IRB 140CR/ | | | |
| IRB 140TCR | 6 kg | 810 mm | Clean Room |
| IRB 140W/ | | | |
| IRB 140TW | 6 kg | 810 mm | Wash 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 | |

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/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 |

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 typically | 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 Wash (High pressure steam washable) Clean Room, class 6 (certified by IPA) |
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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 |
|----------|------------------|

Data and dimensions may be changed without notice

Working range

