High performance industrial robot

The 6-axis IRB 6400 manipulator and S4Cplus robot controller provide short and precise cycle times, rapid change-overs and consistently high process precision. IRB 6400 accounts for one third of the 90,000 ABB robot installations.

The family of 6400 robots consists of different arm variants and payload categories which are controlled by the advanced dynamic model based control function, QuickMove™, always ensuring the highest acceleration, path accuracy and speed over the entire working envelope.

Adaptability
IRB 6400 is designed to be compact with a small interference radius to ensure flexible installations in areas with high density of production equipment. The process media, which is integrated through the robot base is easily exchanged and changing from a 2.5 to 3 meter overarm takes less than 30 minutes. The robot can be calibrated one axis at a time to ensure a quick return to full production.

Reliability and safety
IRB 6400 features robust all-steel construction with high material strength. The arms are mechanically balanced and equipped with double bearings. Advanced motion control and collision detection option greatly reduce the risk of tool and workpiece damage, making this a highly reliable and safe robot.
TECHNICAL DATA, IRB 6400 INDUSTRIAL ROBOT

SPECIFICATION

Robot versions Reach to Handling Remarks
IRB 5th axis 3.0 m 100 kg
6400R/3.0-100 3.0 m 100 kg
6400R/2.5-120 2.5 m 120 kg
6400R/2.5-150 2.5 m 150 kg
6400R/2.8-150 2.8 m 150 kg
6400R/2.5-200 2.5 m 200 kg
6400R/2.8-200 2.8 m 200 kg
6400S/2.9-120 2.9 m 120 kg Shelf
6400PE 2.25 m 5000 N Poke welding
All IRB 6400R-versions have Foundry Plus protection.
For details, see under Environment.

Supplementary load
3.0-100, 2.8-200, 2.5-120, 2.5-150, 2.5-200 and 2.8-150 50+320 kg
Others 35+320 kg

Number of axes
Robot manipulator 6
External devices 6

Integrated signal supply 10 poles 50 V DC
2 poles 250 V AC
2 CAN-Buses

Integrated air supply Max. 10 bar

PERFORMANCE

Position repeatability
2.5-120 and 2.5-150 0.1 mm
Others 0.15 mm

Path repeatability at 1 m/s (based on ISO path)
2.5-120 and 2.5-150 1.0 mm
Others 1.5 mm

Max. TCP velocity on ISO-plane >2-3 m/s
Max. TCP acceleration on ISO-plane >10 m/s

Axis working range
Positioning 1 Rotation 360° 360° 360°
2 Arm 130° 140° 155°
3 Arm 108° 133° 138°
Reorientation 4 Wrist 600° 400° 600°
5 Bend 240° 240° 240°
6 Turn 600° 600° 600°

Max. force, PE 5000 N

ELECTRICAL CONNECTIONS

Supply voltage 200–600 V, 50/60 Hz
Rated power, supply transformer 7.2 – 7.8 kVA

PHYSICAL

Dimensions manipulator base
IRB 6400R 1070 x 1050 mm
IRB 6400S 1044 x 922 mm
IRB 6400PE 1044 x 922 mm

Weight manipulator
6400PE 1600 kg
Others 2060 – 2390 kg

ENVIRONMENT

Ambient temperature
Manipulator 5 – 50°C

Relative humidity Max. 95%

Degree of protection
Foundry plus (all IRB 6400R versions) IP 67 and washable
Foundry (IRB 6400S) Wrist IP 67, the rest IP 55

Noise level Max. 70 dB (A)

Safety
Double circuits with supervision, emergency stops and safety functions , 3-position enable device

Emmission EMC/EMI-shielded

Data and dimensions may be changed without notice.

WORKING RANGE AND LOAD DIAGRAM

www.abb.com/robots