

IRB 6400

Industrial Robot

MAIN APPLICATIONS

- Spot welding
- Press tending
- Material handling
- Machine tending
- Palletizing
- Assembly



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.



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TECHNICAL DATA, IRB 6400 INDUSTRIAL ROBOT

SPECIFICATION

| Robot versions | Reach to 5 th axis | Handling capacity | Remarks |
|-------------------|-------------------------------|-------------------|--------------|
| IRB 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 Others | 50+320 kg 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/s²

| Axis working range | Axis | Shelf | PE | Others |
|--------------------|------------|-------|------|--------|
| 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° |

| Axis maximum speed, °/s | 2.5-120 | 2.5-150 | 2.8-200 | PE | Shelf |
|-------------------------|------------|---------|---------|-----|-------|
| | 3.0-100 | 2.5-200 | | | |
| Axis 2.8-150 | | | | | |
| Positioning | 1 Rotation | 110 | 100 | 90 | 70 |
| | 2 Arm | 100 | 90 | 70 | 70 |
| | 3 Arm | 100 | 90 | 70 | 70 |
| Reorientation | 4 Wrist | 210 | 120 | 110 | 210 |
| | 5 Bend | 150 | 120 | 110 | 150 |
| | 6 Turn | 210 | 190 | 110 | 210 |

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 | 5 - 50°C |
| Manipulator | |

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)

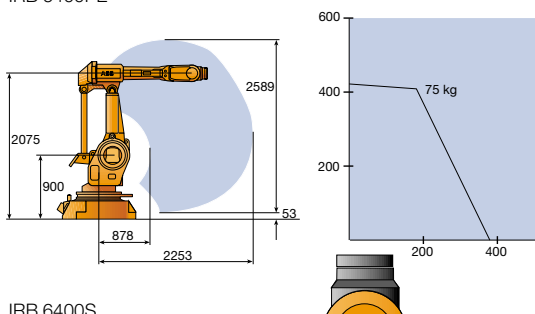
Safety Double circuits with supervision, emergency stops and safety functions, 3-position enable device

Emmission EMC/EMI-shielded

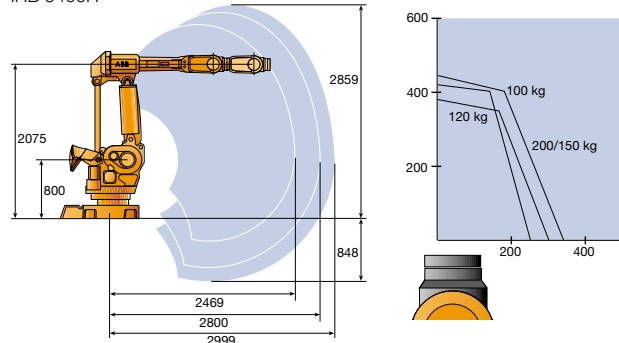
Data and dimensions may be changed without notice.

WORKING RANGE AND LOAD DIAGRAM

IRB 6400PE



IRB 6400R



IRB 6400S

