

A white KUKA industrial robot arm is shown in a three-quarter view, holding a blue solar panel. The robot arm has the KUKA logo embossed on its joints. The solar panel is rectangular with a grid of blue cells and white lines. The background is a dark gradient.

KUKA

Programmed for the future.

KUKA robots for

the electronics industry.

Touch displays, highly efficient solar panels, powerful semiconductors – the rapid progress in electronics has defined today's world.

Efficient automation with KUKA robots ensures that the enormous demand for new electronics products can be met quickly. And at the highest level of quality. Because powerful automation is much more than precision, speed and availability. It is the art of transforming ideas into practice.



Tailored to electronics from head to toe: KUKA robots.

Boost your ROI with KUKA automation.

- Produce more quickly and more efficiently.
- Sustainably reduce rejects.
- Enjoy availability of 99.995 %.

Develop a new dimension of quality.

- Manufacture with the utmost precision and repeatability.
- Master even the smallest workpieces in pick-and-place tasks.
- Integrate intelligent automation into the assembly process.

Maintain high performance despite fast-changing circumstances.

- Flexibly adapt KUKA robots to rapidly changing series.
- Deliver to your customers significantly faster with short time-to-market cycles.
- Implement rising quality requirements with ease.

Gain valuable competitive advantages.

- Acquire new room for maneuver in the face of high pressure on prices.
- Produce even small batches profitably.
- Convince customers with consistently high-quality manufacturing results.

KR AGILUS small robots – the masters of speed.

Unparalleled performance at the highest of speeds. With the new KR AGILUS robot series, KUKA presents a comprehensive small robot family – perfectly tailored to the requirements of the electronics industry.

HIGH SPEED. When it comes to handling tasks, especially those involving quick and precise movements, KUKA small robots demonstrate one of their greatest strengths: extreme speed. This produces impressive results with minimal cycle times.

HIGHEST CLEANROOM CLASS FROM ISO 2 ONWARDS. The KR AGILUS cleanroom variants are specially optimized for the requirements of cleanroom operation. They thus meet not only the requirements of the highest cleanroom classes, but also the strict criteria of the Fraunhofer Institute.



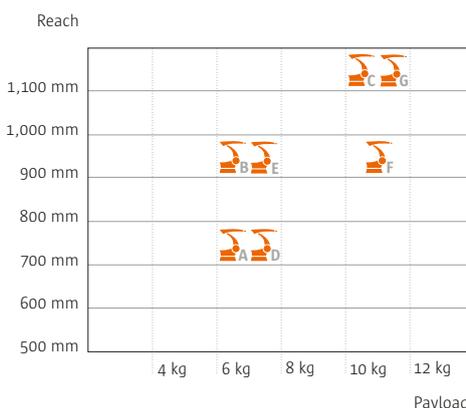
KR 6 R700 five (A)
KR 6 R900 five (B)
KR 10 R1100 five (C)

KR 6 R700 sixx (D)
KR 6 R900 sixx (E)
KR 10 R900 sixx (F)
KR 10 R1100 sixx (G)

PRECISION. Where high repeatability and exactitude are required, KUKA small robots are in their element. They enable manufacturing quality at the highest level. Thanks to their robust design, they work with constant precision throughout the work envelope.

SYMMETRICAL MECHANICAL DESIGN. Thanks to its symmetrical design, the KR AGILUS takes full advantage of its work envelope. It can be integrated into the smallest of spaces and safely operated there.

INTEGRATED ENERGY SUPPLY SYSTEM. For extremely streamlined contours, the small robots from KUKA have their entire energy supply system routed internally. Simple gripper integration and fast reaction – especially for work in confined spaces.



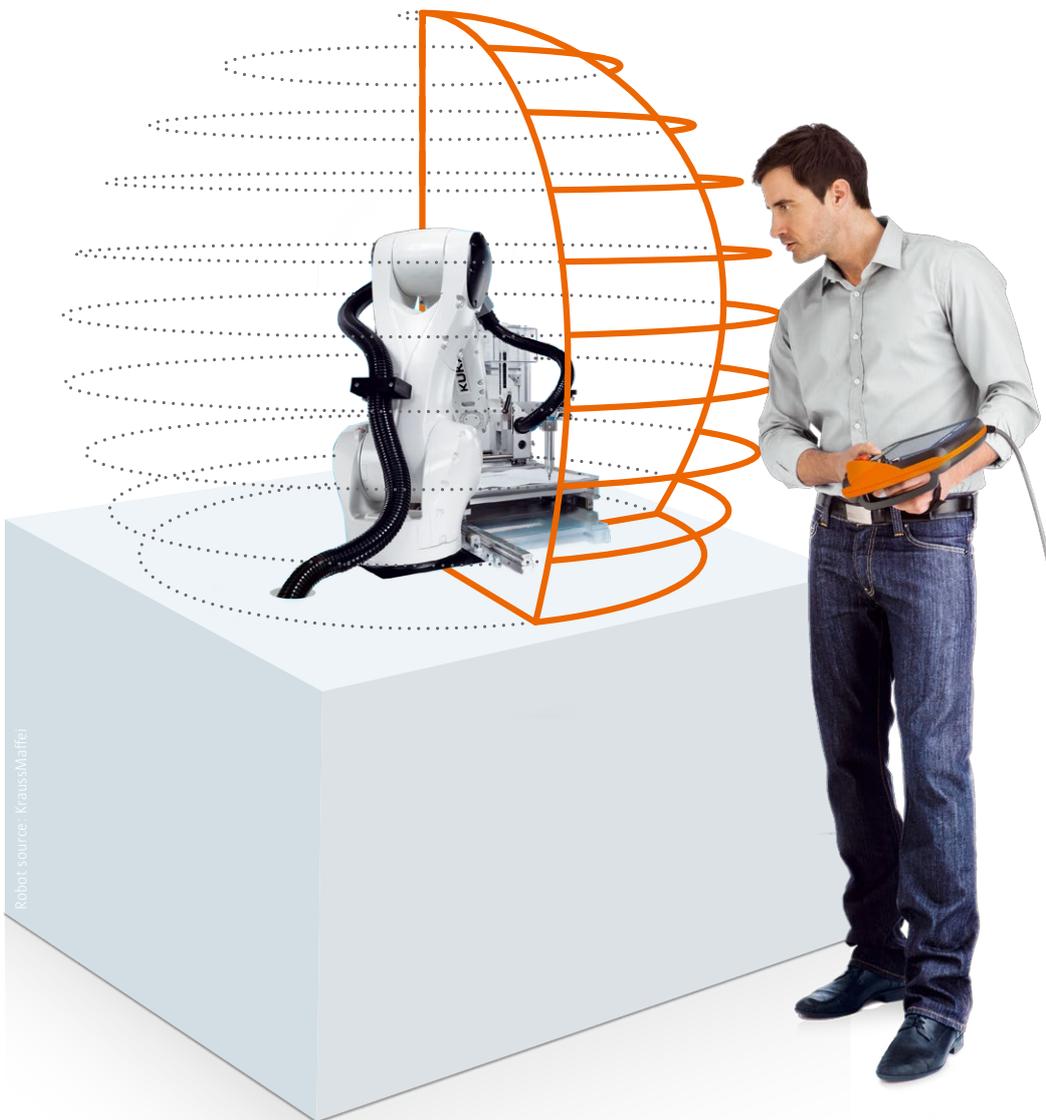
KR AGILUS series. The flexible alternative to conventional SCARA robots. It sets standards with five or six axes, very high speeds, short cycle times and an integrated energy supply system.



**Virtual protected space:
KUKA.SafeOperation.**

KUKA.SafeOperation enables protected spaces to be freely defined in the software, whether between machines or between humans and machines. They restrict or monitor workspaces and safety zones of the robot. And can be flexibly adapted to process sequences and cell geometries.

Since the robot can even move round complex, dynamic interference contours, the space and safeguard requirements for the system are significantly reduced. Factors which lower configuration and operation costs for the cell over the long term.



Robot source: KraussMaffei

99.995%

robot availability.

Shorter production times. Lower costs.

Manufacturing processes in the electronics industry are both complex and diverse. The “adaptive” reuse of components guarantees flexibility and reduces costs. KUKA robot systems to new production tasks. All the technologies and processes required can be easily retrofitted at any time.



**The ultimate in cleanliness:
now also as a cleanroom design.**

Optimized in individual production for cleanroom applications. Enhanced through the use of top-quality materials, special seals and smooth surfaces, KUKA robots not only meet the requirements of the highest cleanroom classes, but also the strict criteria of the Fraunhofer Institute.

**Energy-saving boost:
mechanically applied brakes.**

Conventional robots consume large amounts of energy to hold their position in space when stationary. KR QUANTEC robots are the first in the world to be equipped with mechanically applied brakes. As a result, they significantly reduce the energy consumption of the motors – even during the briefest pauses in motion.

The KR 16 series.

With a payload of 16 kg and a supplementary load of 10 kg, the KR 16-2 CR is perfectly tailored to the requirements of the electronics industry.



95%*

less energy consumption

The KR C4 control system.



KUKA KR C4 – one system controls all. Robot, motion, sequence, process and safety control: the KR C4 unites all the control tasks for efficient use of robots in a single, smart system. With maximum energy efficiency. This sustainably conserves valuable resources and minimizes the cost risks inherent in rising energy prices.

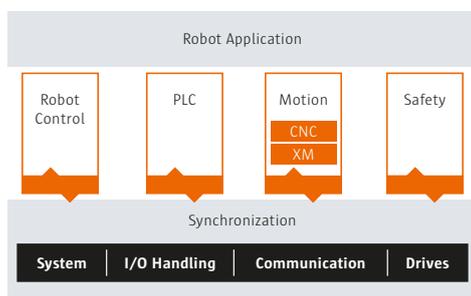
The KR C4's integrated energy management provides standby modes and includes an Ecomode. These reduce the energy consumption by up to 95 %, for example by reducing the robot velocity or through programmable brake systems which maintain the robot's position without any impact on energy consumption. The energy consumption can be simulated and calculated even in the engineering phase. During operation, the energy consumption can then be displayed and verified on the control panel. KR C4 means efficiency with transparent energy consumption. This forms the basis for energy saving certification with tax advantages (ISO 50001).

Four dedicated control modules in one control system.

The KR C4 concept is revolutionary. For the first time, Robot/Motion and LogicControl are seamlessly and interactively integrated with control modules for Safety and CNC. Automation solutions based on the KR C4 are thus considerably more intelligent, flexible and scalable.

Especially low-maintenance – without filter mats.

The passive heat exchange system of the KR C4, with separate air circulation in the inner and outer zones of the controller, allows low-maintenance operation even in dusty environments. Entirely without filter mats.



* In standby modes and Eco mode.

100%

flexibility: personnel and

machines understand

KUKA robots immediately.



Source: Siemens®

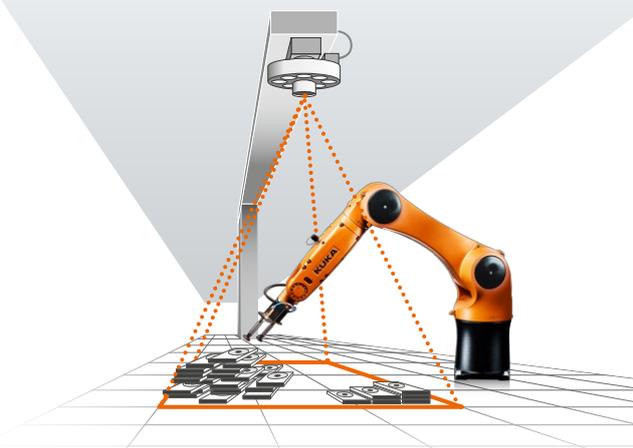
Operation with little knowledge of robotics: thanks to KUKA.PLC mxA.

The convenient, universal interface makes KUKA robots extremely easy to operate. Interacting with the Sinumerik Run MyRobot software package from Siemens®, KUKA.PLC mxA allows a KUKA robot teamed up with production machines to be visualized, operated, programmed and set up in the same system that the user is familiar with from the production machine environment. And all this using the production machine's control panel.



Work more efficiently throughout the software life cycle in automation.

KUKA.WorkVisual: programming with significantly shorter start-up times and minimized risks. Data backup, diagnosis and more. KUKA.WorkVisual groups all the steps of a project together in a homogenous offline development and online diagnosis engineering suite.



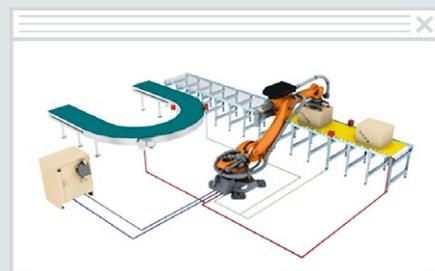
Technology packages

KUKA.VisionTech

“onBoard” vision system including image processing, camera and sensors. Extensive configuration options enable flexible use of the robot in an unstructured environment.

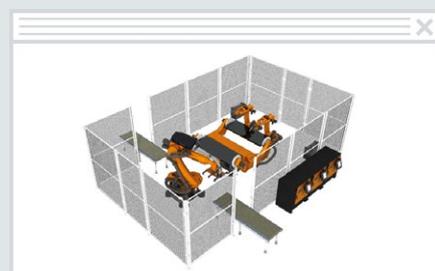
KUKA.ConveyorTech

Organizes the cooperation of robots and conveyors. Allows efficient, dynamic handling of parts, even for complex applications.



KUKA.Sim

The simulation programs of KUKA.Sim allow robotic cells to be planned with true-to-life accuracy.





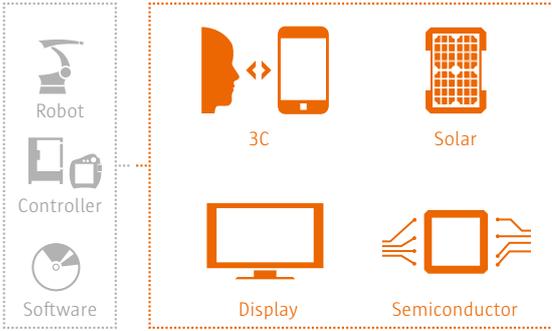
KUKA robots. Highly efficient automation, guaranteed. For the markets of tomorrow.

Whether for pick-and-place, molding, stacking or handling – we supply the cost-effective, durable, reliable and flexible solution for every task. Especially in hotly contested markets like the electronics industry, efficient automation with KUKA is the key to long-term international competitiveness. An availability of 99.995% reduces production times and gives profitability a lasting boost.

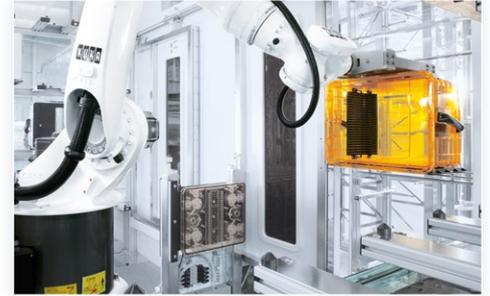
And what's more: KUKA robots are valued in the medical sector for their unlimited application potential in sterile environments. Their special surfaces and modified seals also make them an ideal solution for cleanrooms.

DIN ISO certified:
All KUKA robots are DIN
EN ISO-certified by the
Fraunhofer Institute
and meet the highest
requirements in
operation under
cleanroom conditions.





Fully automatic handling:
Transport boxes are automatically moved from loading and unloading stations in cleaning chambers.



6-axis high-speed system:
Linear units and turntables are loaded during their non-productive time by fast KR AGILUS small robots. For superior flexibility in component variance.



Removal process:
KR AGILUS small robots are characterized by their fast and reliable handling of parts in cells.



Continuous welding of stainless steel sheets:
Resistance roller seam welding of stainless steel housings in the "white goods" sector. A combined tool for handling and welding can process high-quality products in the shortest of cycle times.



Stable reproducibility of soldering processes:
Fully automatic contacting and wiring of solar modules by means of induction soldering, including preparation of the contact ribbons.

World champion in flexibility:
Comparable to linear gantries in terms of speed, but much more flexible – the 6-axis KR AGILUSsmall robot.



Handling of thin glass under cleanroom conditions:
KUKA robots handle the latest generations of displays – with thicknesses ranging from 0,3 to 1.1 mm – fully automatically in the cleanroom.



KUKA Robotics has the perfect solution for every task. Electronics is no exception.



LBR iiwa

The first industrial robot worldwide designed for human-robot collaboration. Sensitive, safe and able to learn. The LBR iiwa opens up entirely new areas of application as a work assistant.



KR AGILUS series

The small robot series with unparalleled performance at the highest of speeds is also available as a waterproof variant.



KR 6-2 und KR 16-2 series

With its minimized disruptive contour and streamlined design, it saves valuable space and reaches any point, even in confined spaces.



Intelligent accessories



KR C4 and KR C4 compact robot control systems

Both cabinet designs fit perfectly into existing machine environments. The open architecture places virtually no limits on technical integration.



KUKA teach pendant: KUKA smartPAD

Enables simple, intuitive operator control of complete systems via touch panel with context-sensitive floating windows.

All the robots in the KUKA robot family, both large and small, are characterized by their high performance. They are also energy-efficient and a sound investment for a vast range of electronics production processes: from large electric motor

parts to the smallest computer chips and other electronics products. There is a suitable KUKA robot for every machine and every variant of electronics production.



KR 30-3 und 60-3 series

It masters payloads up to 60 kg and a pose repeatability of ± 0.08 mm. Precision handling of even heavy workpieces is thus no problem.



KR QUANTEC series

This series stands out for its maximum dynamism, extreme stiffness and high performance combined with low weight.



KR 500 series

The heavyweights. Champions of handling, machining and palletizing large and heavy components.



Comprehensive advice: KUKA Robotic Consulting & Engineering

Our Engineering Team supports you in the design and implementation of new automation systems and optimizes existing ones. This way, the systems provide optimal support for your production at all times – even under altered operating conditions.



Assistance at any time: KUKA Technical Support

Regular maintenance, spare parts supply and fast technical assistance in emergencies: these are the tasks of our Technical Support. Competent service professionals are always nearby when you need them, at a speed and with an expertise that are unbeatable.



Robotics training in over 20 training centers worldwide

The KUKA College in your vicinity provides first-hand practical experience and teaches the necessary technical knowledge for working with the robot.

KUKA – Your strong partner.

Quality made in Germany, creativity and the utmost commitment to customers: at KUKA, this has been the basis for decades of exceptional technology, helping you to decisively optimize your processes. We were the pioneers in the world of robotics, and now we are global leaders in innovation. Our passion is finding future-oriented solutions to make even complex automation tasks simple. Whatever you want to do, and whatever the specific task involved: you can implement it with KUKA. And thanks to close cooperation with our experienced KUKA system partners, that applies to every industry. We strive to turn your ideas into reality. Use our edge to drive your success.



LBR iiwa – for human-robot collaboration worldwide.

LBR iiwa completely redefines the possibilities for industrial robotics. LBR stands for “Leichtbauroboter” (German for lightweight robot), iiwa for “intelligent industrial work assistant”. Its responsive sensors qualify the LBR iiwa for extremely sensitive joining processes that were previously only possible with expensive, external hardware and software. For the first time, humans and robots can work together on highly sensitive tasks in close cooperation. Safety fences are dispensed with. New applications are opened up. The way is paved for greater cost-effectiveness and utmost efficiency.

KUKA Roboter GmbH

Hery-Park 3000, 86368 Gersthofen, Germany, Phone: +49 821 4533 0, www.kuka-robotics.com

Details provided about the properties and usability of the products are purely for information purposes and do not constitute a guarantee of these characteristics. The extent of goods delivered and services performed is determined by the subject matter of the specific contract. No liability accepted for errors or omissions. Subject to technical alterations.

KUKA