

KUKA



Industrial robotics_small robots



The new masters of speed

KUKA small robots for 3 kg and 10 kg payloads

With the KR AGILUS series, KUKA is presenting a comprehensive small robot family. The performance of the KR AGILUS series is unique in its payload category. It sets standards with five or six axes, very high speeds, short cycle times and an integrated energy supply system. The robots master even unusual tasks, whether installed on the floor or ceiling or, in the case of the 6-axis version, also on the wall. All KR AGILUS models are operated uniformly with the service-proven KR C4, the universal control technology for all KUKA robot models.

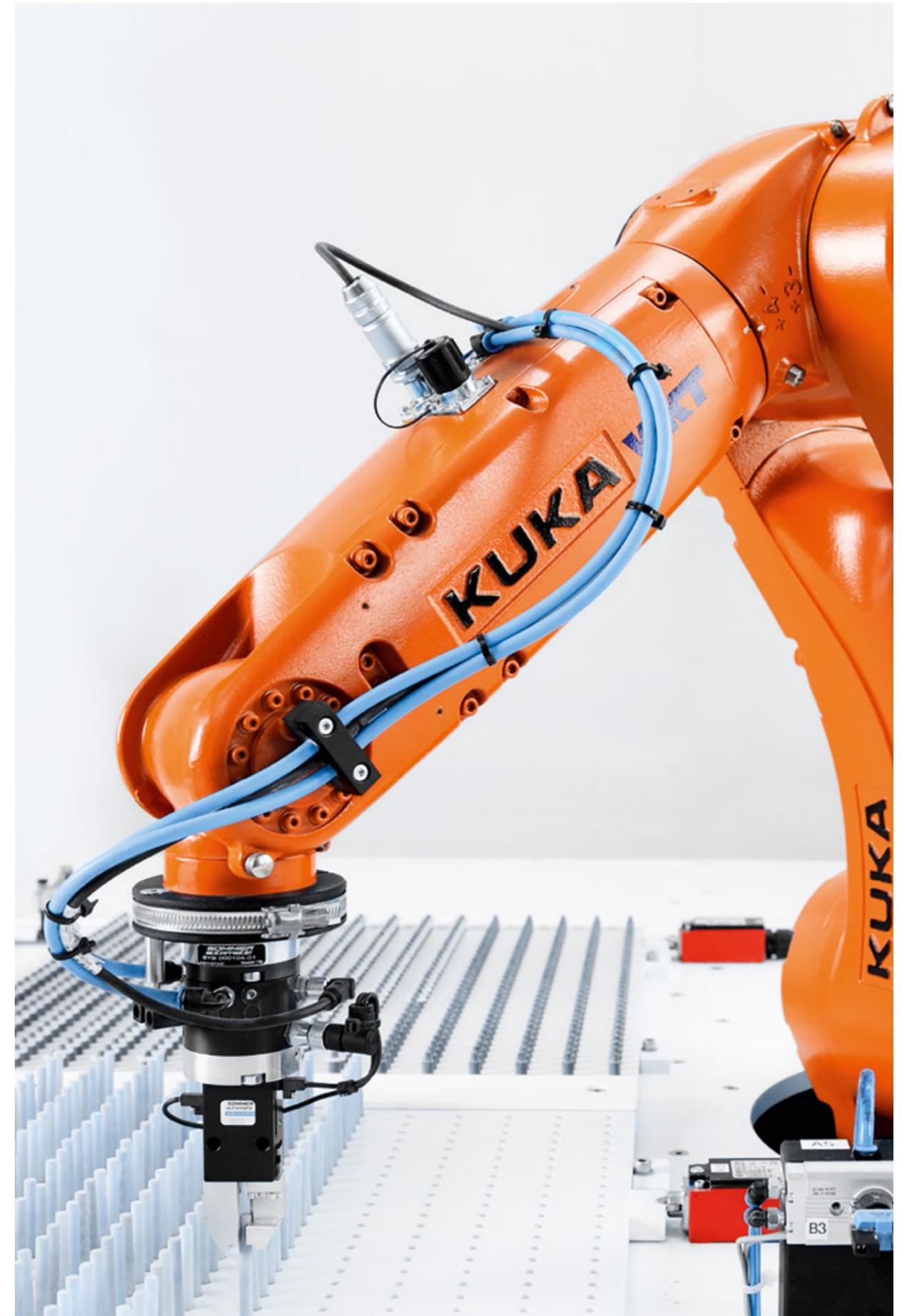
Unique in this class is the Safe Robot functionality, which radically simplifies the efficient cooperation of humans and machines. This enables totally new automation concepts. KR AGILUS: Unparalleled functionality and reliability made by KUKA.

New 2016: KR 3 AGILUS. Great advances often start with small steps – in manufacturing cells measuring only 600 x 600 mm. Here, the KR 3 AGILUS is in its element. Particularly in the case of small parts and products which must be produced in a minimum of space.

KUKA expertise, concentrated into the smallest of spaces, is setting new standards for the 3-kg class. The lightweight robot masters various tasks with agility, dynamism and maximum precision, leading to high flexibility in production – even when it comes to extremely narrow spaces.



To find out more about the KUKA small robot family, scan this QR code with your smartphone.



The KR AGILUS series

The future of small robots

Product overview

Robot	KR 3 AGILUS	KR 3 R540			
	KR AGILUS sixx series	KR 6 R700 sixx	KR 6 R900 sixx	KR 10 R900 sixx	KR 10 R1100 sixx
	KR AGILUS five series	KR 6 R700 five	KR 6 R900 five	KR 10 R1100 five	
Controller	KR C4 compact				
Teach pendant	KUKA smartPAD				

Reach / Payload

1,100 mm				D H
1,000 mm				
900 mm		C F		G
800 mm				
700 mm		B E		
600 mm				
500 mm	A			
	3 kg	6 kg	8 kg	10 kg

- A** KR 3 R 540
- B** KR 6 R700 five
- C** KR 6 R900 five
- D** KR 10 R1100 five
- E** KR 6 R700 sixx
- F** KR 6 R900 sixx
- G** KR 10 R900 sixx
- H** KR 10 R1100 sixx



Convincing in any position: KR AGILUS five series for installation on the floor and ceiling, KR AGILUS sixx series additionally for installation on the wall.

Variant KR AGILUS sixx series

- CR** suitable for cleanrooms
- WP** splash-proof
- HM** hygienic machine
- EX** suitable for use in potentially explosive environments

_Wide range of mounting positions

_Extreme precision

_Low maintenance



_High speed

_Optimal work envelope

_Wide range of ambient conditions

High speed. In handling tasks, especially pick-and-place tasks, KUKA small robots demonstrate one of their greatest strengths: extreme speed. This produces impressive results with minimal cycle times.

Precision. Where high repeatability and accuracy 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 continuous precision throughout the work envelope.

Wide range of mounting positions. The KUKA small robots produce impressive results in every position – thanks to the brakes integrated in all axes. The robots of the KR AGILUS five series for installation on the floor and ceiling, the KR AGILUS sixx series additionally for installation on the wall.

Low maintenance. The KUKA small robots require no change of lubricant (lifetime lubrication). This makes them ideally suited to continuous, uninterrupted productivity.

Optimal work envelope. With reaches of up to 1,100 mm and the ability to reach points near to the robot base as well as in the overhead area, the KR AGILUS offers an optimal work envelope. Additional equipment can be attached at the mounting points on axis 3 and axis 4 (e.g. valves and I/O modules). This enables cost-effective, space-saving cell concepts.

Wide range of ambient conditions. Depending on the area of application, the KR AGILUS is available in a number of different variants: splash-proof, cleanroom or hygienic machine.



KR 3 AGILUS

KR 3 R540

Reliable & precise. For maximum ROI. Thanks to its intelligent design, the KR 3 AGILUS is cost-effective, requires minimal maintenance and is highly reliable. Proven KUKA quality, reliable technology and robust components provide the highest availability and optimal output – and, as a result, maximum ROI and low Total Cost of Ownership.

Needs minimal space. Offers optimal productivity per square meter. The KR 3 AGILUS enables automation in confined spaces. This makes it ideal for use in 600 x 600 mm automation cells. An internally routed energy supply system, protected interfaces on the arm and minimal disruptive contours allow for flexible motions even in confined spaces.

Meets targets faster. Increases your output. Wherever minimum cycle times and maximum output in production are needed, the KR 3 AGILUS is ideally suited for the task. Optimally coordinated components and high performance potential enable minimized cycle times and maximum value creation.

If you want flexibility, you need many talents. The KR 3 AGILUS is optimized for the production of the smallest components and products. For example, for applications such as the assembly of small parts, Pick & Place, screw fastening, brazing, adhesive bonding, packaging, testing & inspection and much more. Variable mounting positions and easy integration allow the robot to offer maximum flexibility for short product cycles in manufacturing.



KR 3 AGILUS	KR 3 R540
Max. reach	541 mm
Max. payload	3 kg
Pose repeatability	±0.02 mm
Number of axes	6
Mounting position	Floor, ceiling, wall, angle
Variant	-
Robot footprint	179 mm x 179 mm
Weight (excluding controller), approx.	26 kg

Axis data /

Range of motion

Axis 1 (A1)	+/-170°
Axis 2 (A2)	-170° / 50°
Axis 3 (A3)	-110° / 155°
Axis 4 (A4)	+/-175°
Axis 5 (A5)	+/-120°
Axis 6 (A6)	+/-350°

Operating conditions

Ambient temperature, robot	+5 °C to +45 °C
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Protection rating

Protection rating, robot	IP 40
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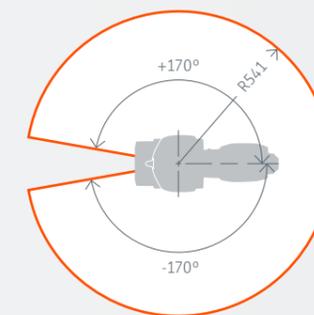
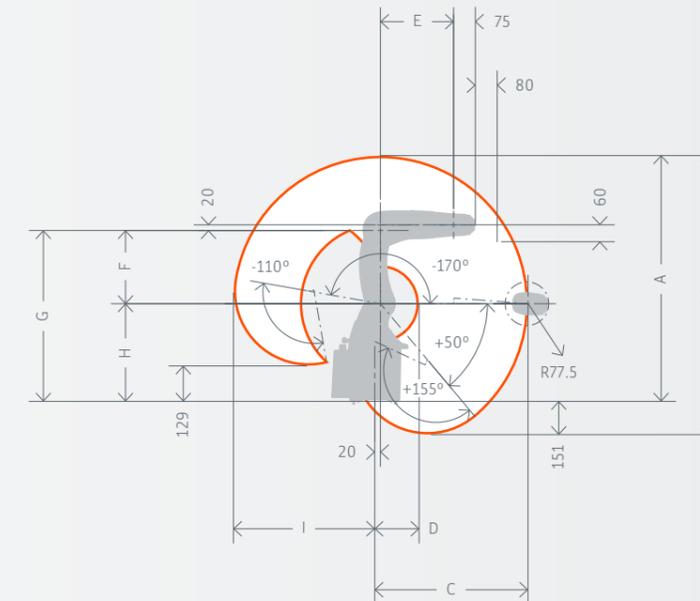
Controller	KR C4 compact
Teach pendant	KUKA smartPAD

The KR AGILUS interface plate

- 1 Motor connection
- 2 Data connection
- 3 Air connection
- 4 Micro EMD
- 5 I/O signal connection
- 6 I/O signal connection
- 7 Air connections



Work envelope ¹	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Dimensions H	Dimensions I
KR 3 R 540	866 mm	981 mm	541 mm	152 mm	260 mm	260 mm	605 mm	345 mm	497 mm



Cycle time

KR 3 AGILUS (25/305/25; 1 kg Payload)	167 cycles / min
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¹Relative to intersection of axes 4/5.

KR AGILUS

KR 6 R700 sixx

Minimum cycle times. The KR AGILUS sixx has six axes and is consistently rated for particularly high working speeds. At the same time, it offers high precision.

Space-saving integration. Low space requirements and the choice between installation on the floor, ceiling or wall make the KR AGILUS sixx extremely adaptable.

Integrated energy supply system. Routed internally in the KUKA small robots, thereby saving space. Includes EtherCAT/EtherNet (bus cable), three 5/2-way valves (compressed air), direct air line and inputs/outputs.

KR C4 architecture and functionalities. KUKA small robots are every bit as versatile as their larger relatives. They are operated via the KR C4 compact controller, with the same range of functions as the service-proven KR C4 controller.

KUKA.SafeOperation. KUKA small robots set standards in safety. Only they offer the KUKA.SafeOperation functionality, which radically simplifies the effective cooperation of humans and machines.



KR AGILUS	KR 6 R700 sixx
Max. reach	706.7 mm
Max. payload	6 kg
Pose repeatability	±0.03 mm
Number of axes	6
Mounting position	Floor, ceiling, wall
Variant	CR HM WP
Robot footprint	209 mm × 207 mm
Weight (excluding controller), approx.	50 kg

Axis data / Range of motion	
Axis 1 (A1)	+/-170°
Axis 2 (A2)	+45°/-190°
Axis 3 (A3)	+156°/-120°
Axis 4 (A4)	+/-185°
Axis 5 (A5)	+/-120°
Axis 6 (A6)	+/-350°

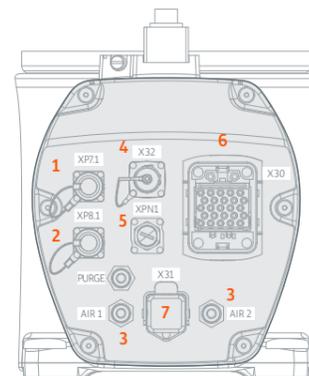
Operating conditions	
Ambient temperature, robot	+5°C to +45°C

Protection rating	
Protection rating, robot	IP 54

Controller	KR C4 compact
Teach pendant	KUKA smartPAD

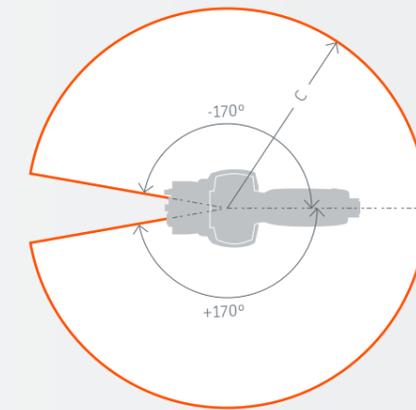
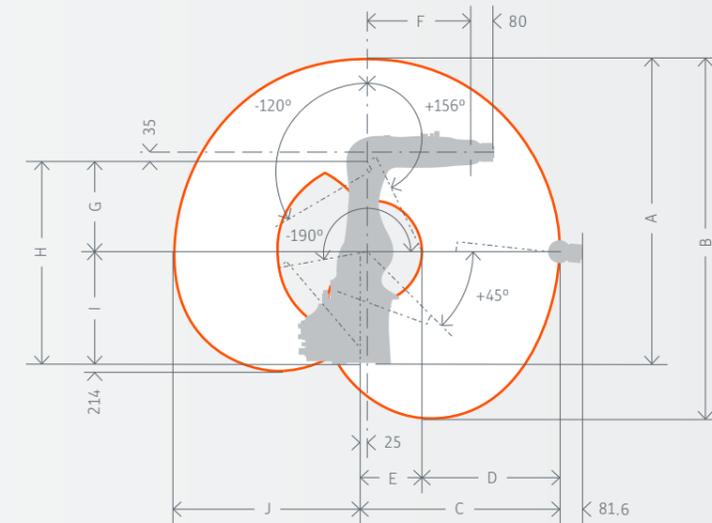
The KR AGILUS interface plate

- 1 Resolver input for axis 7
- 2 Resolver input for axis 8
- 3 Pneumatic connections (Air 1, Air 2, cleaning air)
- 4 Micro EMD
- 5 Extension Interface (100 MBit)
- 6 Motor connector
- 7 Interface connection

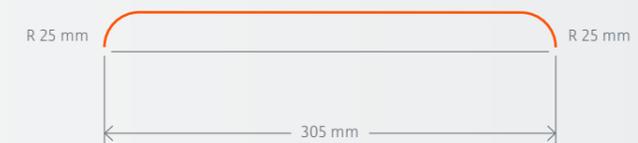


- CR** suitable for cleanrooms
- HM** hygienic machine
- WP** splash-proof

Work envelope ¹	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Dimensions H	Dimensions I	Dimensions J
KR 6 R700 sixx	1,082 mm	1,271 mm	706.7 mm	501.1 mm	205.6 mm	365 mm	315 mm	715 mm	400 mm	656.7 mm



Cycle time	
KR 6 R700 sixx (25/305/25; 1 kg Payload)	138 cycles / min



¹Relative to intersection of axes 4/5.

KR AGILUS

KR 6 R900 sixx

Minimum cycle times. The KR AGILUS sixx has six axes and is consistently rated for particularly high working speeds. At the same time, it offers high precision.

Space-saving integration. Low space requirements and the choice between installation on the floor, ceiling or wall make the KR AGILUS sixx extremely adaptable.

Integrated energy supply system. Routed internally in the KUKA small robots, thereby saving space. Includes EtherCAT/EtherNet (bus cable), three 5/2-way valves (compressed air), direct air line and inputs/outputs.

KR C4 architecture and functionalities. KUKA small robots are every bit as versatile as their larger relatives. They are operated via the KR C4 compact controller, with the same range of functions as the service-proven KR C4 controller.

KUKA.SafeOperation. KUKA small robots set standards in safety. Only they offer the KUKA.SafeOperation functionality, which radically simplifies the effective cooperation of humans and machines.



KR 3 AGILUS	KR 6 R900 sixx
Max. reach	901 mm
Max. payload	6 kg
Pose repeatability	±0.03 mm
Number of axes	6
Mounting position	Floor, ceiling, wall
Variant	CR HM EX WP
Robot footprint	209 mm × 207 mm
Weight (excluding controller), approx.	52 kg

Axis data / Range of motion	
Axis 1 (A1)	+/-170°
Axis 2 (A2)	+45°/-190°
Axis 3 (A3)	+156°/-120°
Axis 4 (A4)	+/-185°
Axis 5 (A5)	+/-120°
Axis 6 (A6)	+/-350°

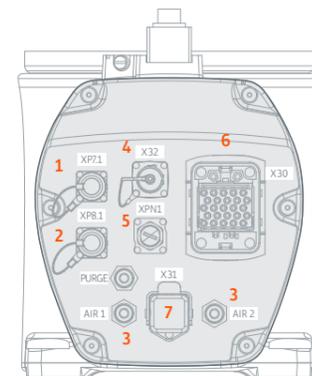
Operating conditions	
Ambient temperature, robot	+5°C to +45°C

Protection rating	
Protection rating, robot	IP 54

Controller	KR C4 compact
Teach pendant	KUKA smartPAD

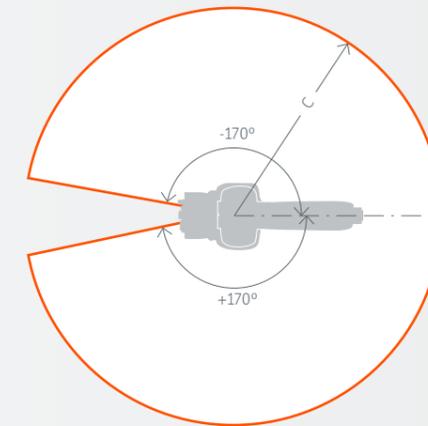
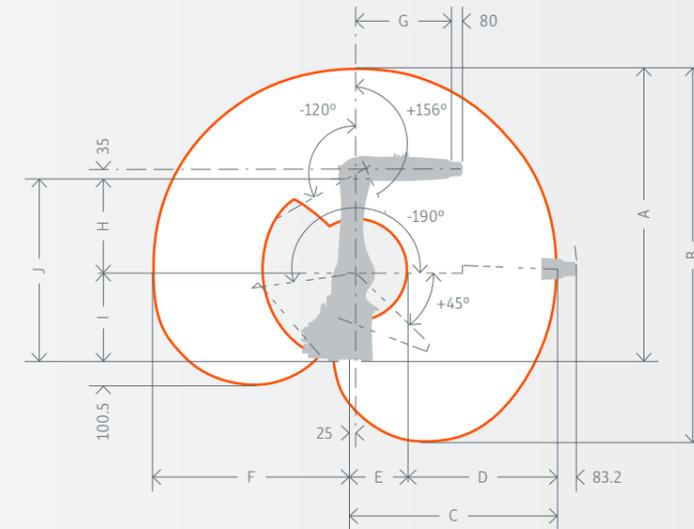
The KR AGILUS interface plate

- 1 Resolver input for axis 7
- 2 Resolver input for axis 8
- 3 Pneumatic connections (Air 1, Air 2, cleaning air)
- 4 Micro EMD
- 5 Extension Interface (100 MBit)
- 6 Motor connector
- 7 Interface connection

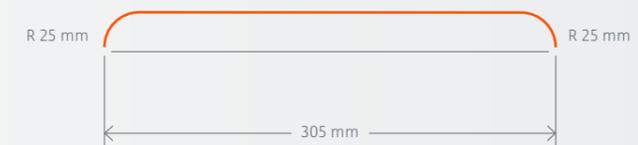


- CR** suitable for cleanrooms
- HM** hygienic machine
- EX** suitable for use in potentially explosive environments
- WP** splash-proof

Work envelope ¹	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Dimensions H	Dimensions I	Dimensions J
KR 6 R900 sixx	1,276 mm	1,620 mm	901.5 mm	656 mm	245.5 mm	851.5 mm	420 mm	455 mm	400 mm	855 mm



Cycle time	
KR 6 R900 sixx (25/305/25; 1 kg Payload)	150 cycles / min



¹Relative to intersection of axes 4/5.

KR AGILUS

KR 10 R900 sixx

Minimum cycle times. The KR AGILUS sixx has six axes and is consistently rated for particularly high working speeds. At the same time, it offers high precision.

Space-saving integration. Low space requirements and the choice between installation on the floor, ceiling or wall make the KR AGILUS sixx extremely adaptable.

Integrated energy supply system. Routed internally in the KUKA small robots, thereby saving space. Includes EtherCAT/EtherNet (bus cable), three 5/2-way valves (compressed air), direct air line and inputs/outputs.

KR C4 architecture and functionalities. KUKA small robots are every bit as versatile as their larger relatives. They are operated via the KR C4 compact controller, with the same range of functions as the service-proven KR C4 controller.

KUKA.SafeOperation. KUKA small robots set standards in safety. Only they offer the KUKA.SafeOperation functionality, which radically simplifies the effective cooperation of humans and machines.



KR AGILUS	KR 10 R900 sixx
Max. reach	901.5 mm
Max. payload	10 kg
Pose repeatability	±0.03 mm
Number of axes	6
Mounting position	Floor, ceiling, wall
Variant	CR HM WP
Robot footprint	209 mm × 207 mm
Weight (excluding controller), approx.	52 kg

Axis data / Range of motion	
Axis 1 (A1)	+/-170°
Axis 2 (A2)	+45°/-190°
Axis 3 (A3)	+156°/-120°
Axis 4 (A4)	+/-185°
Axis 5 (A5)	+/-120°
Axis 6 (A6)	+/-350°

Operating conditions	
Ambient temperature, robot	+5 °C to +45 °C

Protection rating	
Protection rating, robot	IP 54

Controller	KR C4 compact
Teach pendant	KUKA smartPAD

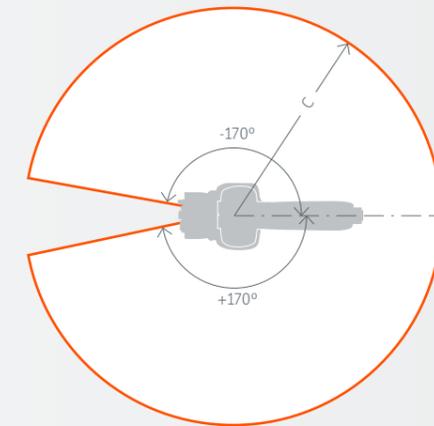
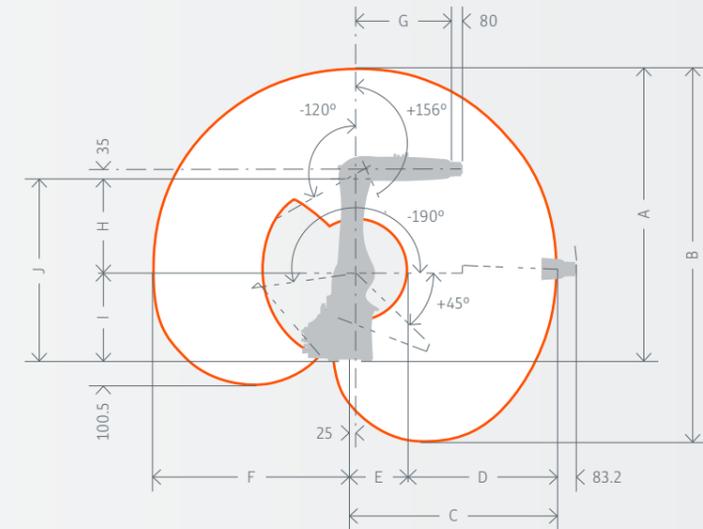
The KR AGILUS interface plate

- 1 Resolver input for axis 7
- 2 Resolver input for axis 8
- 3 Pneumatic connections (Air 1, Air 2, cleaning air)
- 4 Micro EMD
- 5 Extension Interface (100 MBit)
- 6 Motor connector
- 7 Interface connection

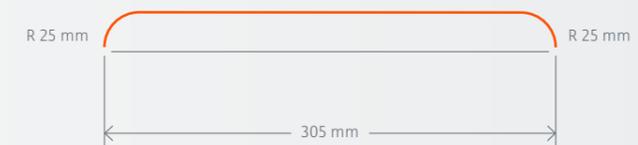


- CR** suitable for cleanrooms
- HM** hygienic machine
- WP** splash-proof

Work envelope ¹	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Dimensions H	Dimensions I	Dimensions J
KR 10 R900 sixx	1,276 mm	1,620 mm	901.5 mm	656 mm	245.5 mm	851.5 mm	420 mm	455 mm	400 mm	855 mm



Cycle time	
KR 10 R900 sixx (25/305/25; 1 kg Payload)	131 cycles / min



¹Relative to intersection of axes 4/5.

KR AGILUS

KR 10 R1100 sixx

Minimum cycle times. The KR AGILUS sixx has six axes and is consistently rated for particularly high working speeds. At the same time, it offers high precision.

Space-saving integration. Low space requirements and the choice between installation on the floor, ceiling or wall make the KR AGILUS sixx extremely adaptable.

Integrated energy supply system. Routed internally in the KUKA small robots, thereby saving space. Includes EtherCAT/EtherNet (bus cable), three 5/2-way valves (compressed air), direct air line and inputs/outputs.

KR C4 architecture and functionalities. KUKA small robots are every bit as versatile as their larger relatives. They are operated via the KR C4 compact controller, with the same range of functions as the service-proven KR C4 controller.

KUKA.SafeOperation. KUKA small robots set standards in safety. Only they offer the KUKA.SafeOperation functionality, which radically simplifies the effective cooperation of humans and machines.



KR AGILUS	KR 10 R1100 sixx
Max. reach	1,101 mm
Max. payload	10 kg
Pose repeatability	±0.03 mm
Number of axes	6
Mounting position	Floor, ceiling, wall
Variant	CR HM WP
Robot footprint	209 mm × 207 mm
Weight (excluding controller), approx.	54 kg

Axis data / Range of motion	
Axis 1 (A1)	+/-170°
Axis 2 (A2)	+45°/-190°
Axis 3 (A3)	+156°/-120°
Axis 4 (A4)	+/-185°
Axis 5 (A5)	+/-120°
Axis 6 (A6)	+/-350°

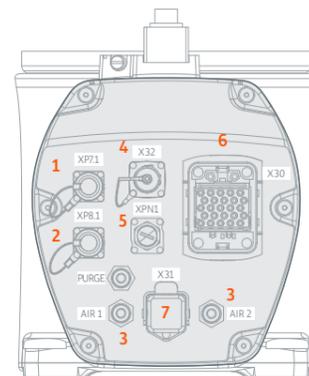
Operating conditions	
Ambient temperature, robot	+5°C to +45°C

Protection rating	
Protection rating, robot	IP 54

Controller	KR C4 compact
Teach pendant	KUKA smartPAD

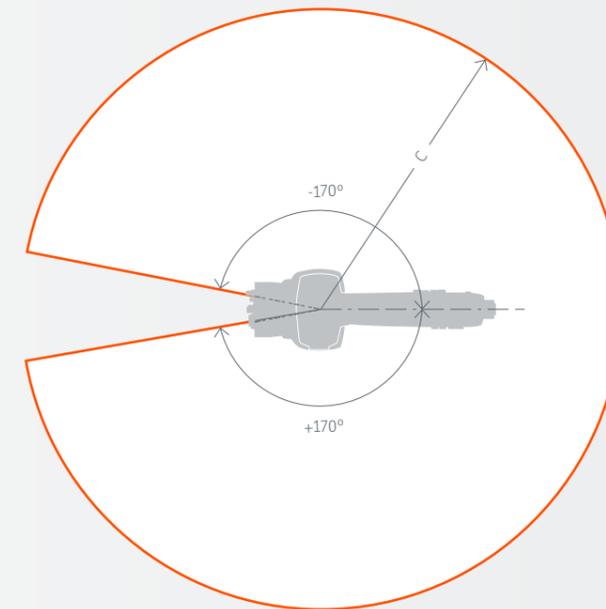
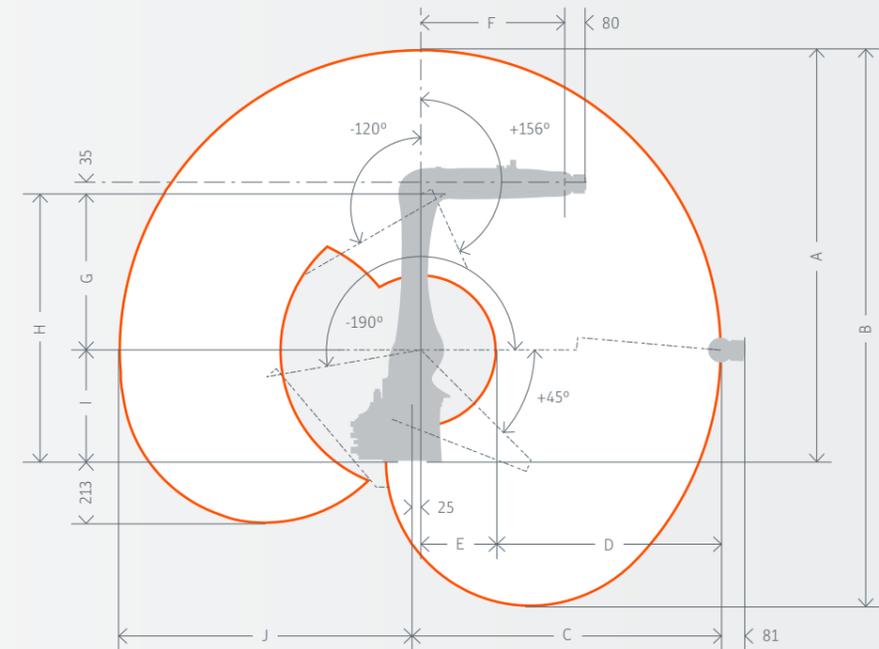
The KR AGILUS interface plate

- 1 Resolver input for axis 7
- 2 Resolver input for axis 8
- 3 Pneumatic connections (Air 1, Air 2, cleaning air)
- 4 Micro EMD
- 5 Extension Interface (100 MBit)
- 6 Motor connector
- 7 Interface connection



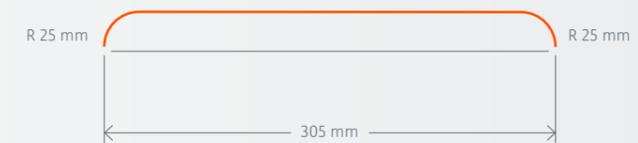
- CR** suitable for cleanrooms
- HM** hygienic machine
- WP** splash-proof

Work envelope ¹	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Dimensions H	Dimensions I	Dimensions J
KR 10 R1100 sixx	1,476 mm	1,988 mm	1,101 mm	813 mm	288 mm	515 mm	560 mm	960 mm	400 mm	1,051 mm



Cycle time

KR 10 R1100 sixx (25/305/25; 1 kg Payload)	143 cycles / min
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¹Relative to intersection of axes 4/5.

KR AGILUS

KR 6 R700 five

Minimum cycle times. With five axes, the KR AGILUS five is consistently rated for particularly high working speeds. At the same time, it offers high precision.

Space-saving integration. Low space requirements and the choice between installation on the floor or ceiling make the KR AGILUS five extremely adaptable.

Integrated energy supply system. Routed internally in the KUKA small robots, thereby saving space. Includes EtherCAT/EtherNet (bus cable), three 5/2-way valves (compressed air), direct air line and inputs/outputs.

KR C4 architecture and functionalities. KUKA small robots are every bit as versatile as their larger relatives. They are operated via the KR C4 compact controller, with the same range of functions as the service-proven KR C4 controller.

KUKA.SafeOperation. KUKA small robots set standards in safety. Only they offer the KUKA.SafeOperation functionality, which radically simplifies the effective cooperation of humans and machines.



KR AGILUS	KR 6 R700 five
Max. reach	706.7 mm
Max. payload	6 kg
Pose repeatability	±0.03 mm
Number of axes	5
Mounting position	Floor, ceiling ¹
Variant	-
Robot footprint	209 mm × 207 mm
Weight (excluding controller), approx.	48 kg

Axis data / Range of motion	
Axis 1 (A1)	+/-170°
Axis 2 (A2)	+45°/-186°
Axis 3 (A3)	+156°/+6°
Axis 4 (A4)	-
Axis 5 (A5)	+120°/-111°
Axis 6 (A6)	+/-350°

Operating conditions	
Ambient temperature, robot	+5°C to +45°C

Protection rating	
Protection rating, robot	IP 54

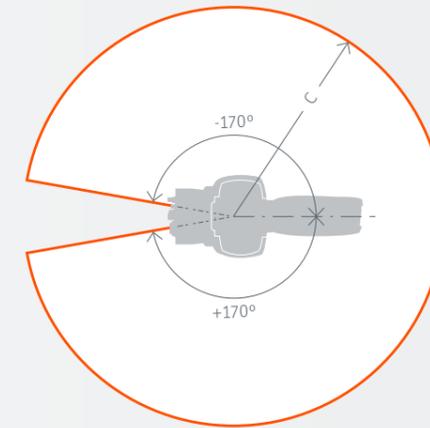
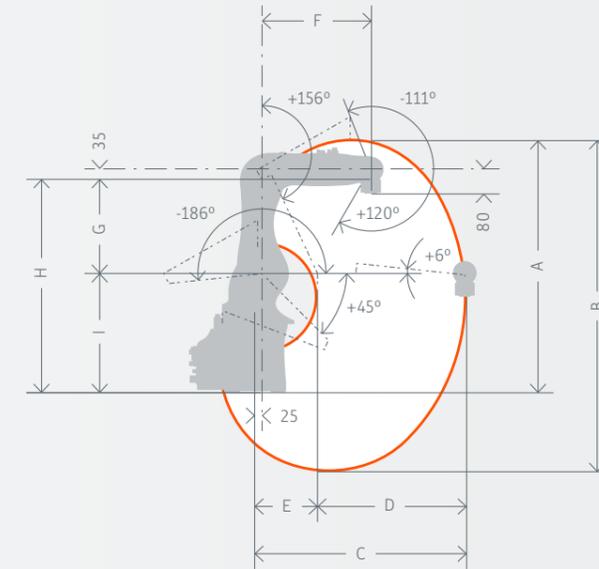
Controller	KR C4 compact
Teach pendant	KUKA smartPAD

The KR AGILUS interface plate

- 1 Resolver input for axis 7
- 2 Resolver input for axis 8
- 3 Pneumatic connections (Air 1, Air 2, cleaning air)
- 4 Micro EMD
- 5 Extension Interface (100 MBit)
- 6 Motor connector
- 7 Interface connection

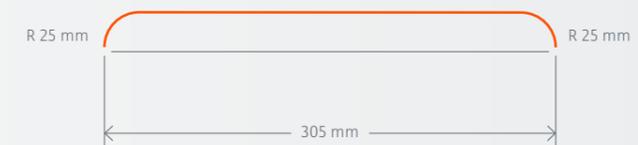


Work envelope ²	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Dimensions H	Dimensions I
KR 6 R700 five	848 mm	1,117 mm	706.7 mm	501.2 mm	205.5 mm	365 mm	315 mm	715 mm	400 mm



Cycle time

KR 6 R700 five (25/305/25; 1 kg Payload)	142 cycles / min
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¹ Different motion ranges.

² Relative to intersection of axes 4/5.

KR AGILUS

KR 6 R900 fivve

Minimum cycle times. With five axes, the KR AGILUS fivve is consistently rated for particularly high working speeds. At the same time, it offers high precision.

Space-saving integration. Low space requirements and the choice between installation on the floor or ceiling make the KR AGILUS fivve extremely adaptable.

Integrated energy supply system. Routed internally in the KUKA small robots, thereby saving space. Includes EtherCAT/EtherNet (bus cable), three 5/2-way valves (compressed air), direct air line and inputs/outputs.

KR C4 architecture and functionalities. KUKA small robots are every bit as versatile as their larger relatives. They are operated via the KR C4 compact controller, with the same range of functions as the service-proven KR C4 controller.

KUKA.SafeOperation. KUKA small robots set standards in safety. Only they offer the KUKA.SafeOperation functionality, which radically simplifies the effective cooperation of humans and machines.



KR AGILUS	KR 6 R900 fivve
Max. reach	901 mm
Max. payload	6 kg
Pose repeatability	±0.03 mm
Number of axes	5
Mounting position	Floor, ceiling ¹
Variant	-
Robot footprint	209 mm × 207 mm
Weight (excluding controller), approx.	51 kg

Axis data / Range of motion	
Axis 1 (A1)	+/-170°
Axis 2 (A2)	+45°/-186°
Axis 3 (A3)	+156°/+5°
Axis 4 (A4)	-
Axis 5 (A5)	+120°/-111°
Axis 6 (A6)	+/-350°

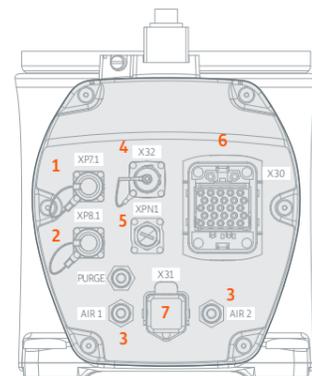
Operating conditions	
Ambient temperature, robot	+5°C to +45°C

Protection rating	
Protection rating, robot	IP 54

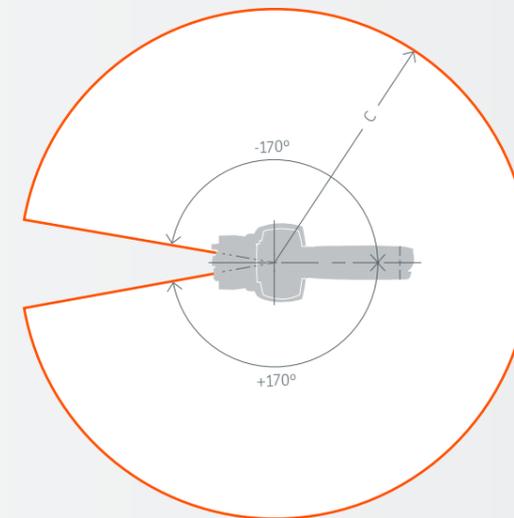
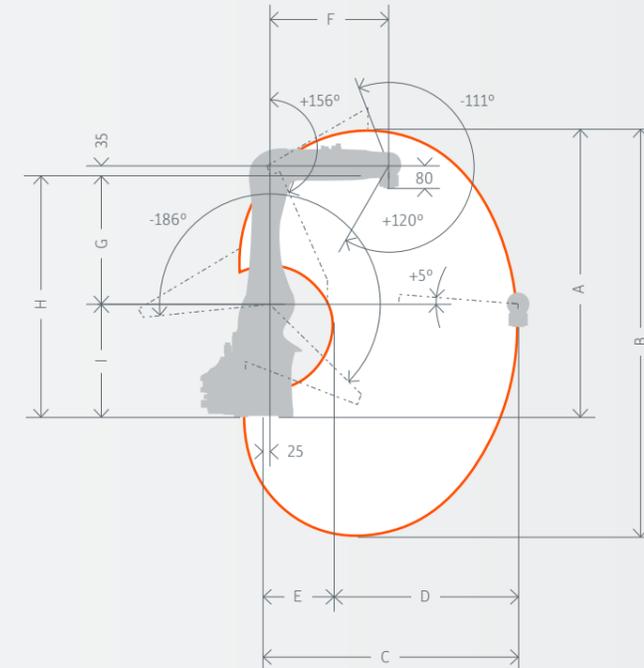
Controller	KR C4 compact
Teach pendant	KUKA smartPAD

The KR AGILUS interface plate

- 1 Resolver input for axis 7
- 2 Resolver input for axis 8
- 3 Pneumatic connections (Air 1, Air 2, cleaning air)
- 4 Micro EMD
- 5 Extension Interface (100 MBit)
- 6 Motor connector
- 7 Interface connection

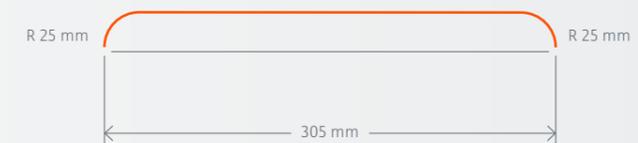


Work envelope ²	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Dimensions H	Dimensions I
KR 6 R900 fivve	1,015 mm	1,437 mm	901.5 mm	656.5 mm	245 mm	420 mm	455 mm	855 mm	400 mm



Cycle time

KR 6 R900 fivve (25/305/25; 1 kg Payload)	155 cycles / min
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¹ Different motion ranges.

² Relative to intersection of axes 4/5.

KR AGILUS

KR 10 R1100 fivve

Minimum cycle times. With five axes, the KR AGILUS fivve is consistently rated for particularly high working speeds. At the same time, it offers high precision.

Space-saving integration. Low space requirements and the choice between installation on the floor or ceiling make the KR AGILUS fivve extremely adaptable.

Integrated energy supply system. Routed internally in the KUKA small robots, thereby saving space. Includes EtherCAT/EtherNet (bus cable), three 5/2-way valves (compressed air), direct air line and inputs/outputs.

KR C4 architecture and functionalities. KUKA small robots are every bit as versatile as their larger relatives. They are operated via the KR C4 compact controller, with the same range of functions as the service-proven KR C4 controller.

KUKA.SafeOperation. KUKA small robots set standards in safety. Only they offer the KUKA.SafeOperation functionality, which radically simplifies the effective cooperation of humans and machines.



KR AGILUS	KR 10 R1100 fivve
Max. reach	1,101 mm
Max. payload	10 kg
Pose repeatability	±0.03 mm
Number of axes	5
Mounting position	Floor, ceiling ¹
Variant	-
Robot footprint	209 mm × 207 mm
Weight (excluding controller), approx.	53 kg

Axis data / Range of motion	
Axis 1 (A1)	+/-170°
Axis 2 (A2)	+45°/-186°
Axis 3 (A3)	+156°/+5°
Axis 4 (A4)	-
Axis 5 (A5)	+120°/-111°
Axis 6 (A6)	+/-350°

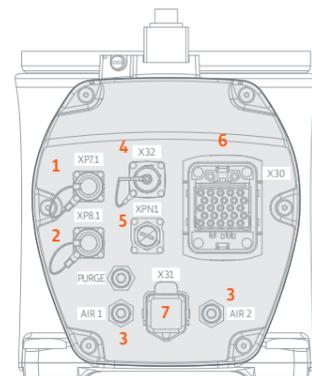
Operating conditions	
Ambient temperature, robot	+5°C to +45°C

Protection rating	
Protection rating, robot	IP 54

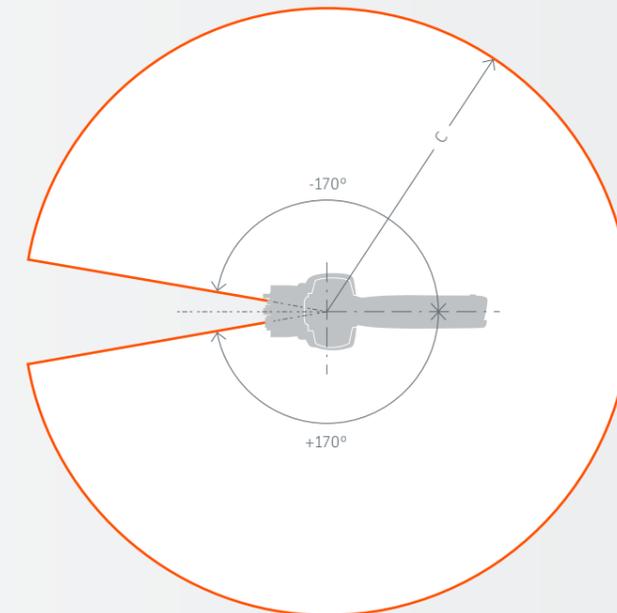
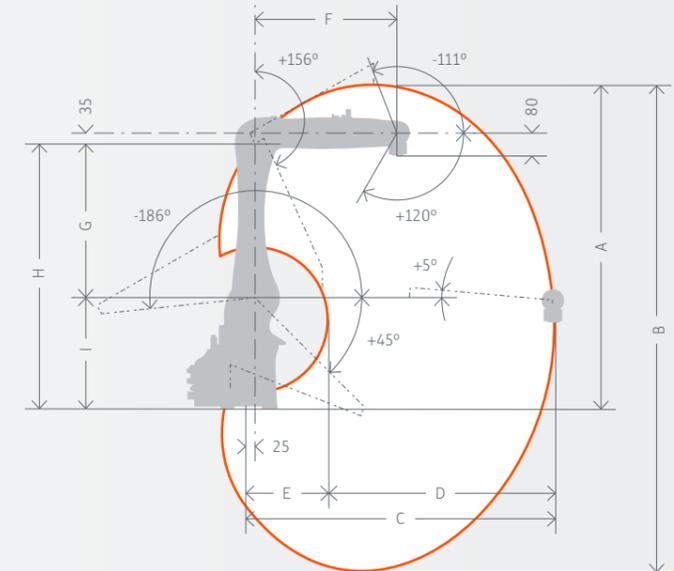
Controller	KR C4 compact
Teach pendant	KUKA smartPAD

The KR AGILUS interface plate

- 1 Resolver input for axis 7
- 2 Resolver input for axis 8
- 3 Pneumatic connections (Air 1, Air 2, cleaning air)
- 4 Micro EMD
- 5 Extension Interface (100 MBit)
- 6 Motor connector
- 7 Interface connection



Work envelope ²	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Dimensions H	Dimensions I
KR 10 R1100 fivve	1,168 mm	1,757 mm	1,101 mm	813 mm	288 mm	515 mm	560 mm	960 mm	400 mm



Cycle time

KR 10 R1100 fivve (25/305/25; 1kg Payload)	147 cycles / min
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¹ Different motion ranges.

² Relative to intersection of axes 4/5.

An unbeatable team

KUKA System Components



Faster as a team

Extremely fast, streamlined and robust. The KR AGILUS small robot family. Solve automation tasks more flexibly. Minimize cycle times. Open up totally new areas of application. The extensive KUKA small robot series is 100 percent KUKA: reliable quality and durability, combined with maximum functional diversity and flexibility. Fastest small robots and the KUKA SafeOperation function – this combination is what gives the KR AGILUS series its major competitive advantage.



Safer as a team

The small robot control system of the future. With its compact dimensions and the powerful technology of the service-proven KR C4, the KR C4 compact offers maximum performance in minimum space. The revolutionary concept provides a firm foundation for the automation of tomorrow. Only KUKA offers integrated safety functions as a standard, together with open interfaces enables truly simple integration into the overall system. This significantly reduces the costs in automation for integration, maintenance and servicing. At the same time, the long-term efficiency and flexibility of the systems are increased. Benefit from the openness you need to meet tomorrow's requirements.



Simpler as a team

The simplest way of operating robots. Touch screen. Graphics support. Flexible interaction. With its large touch screen, the KUKA smartPAD allows operation of both the robots and entire systems, all visually represented on the screen. The display adapts to show the user only those operator control elements that are needed at any given moment. Attention is always focused on what is important, allowing users to work more intuitively, quickly, easily and efficiently.



More versatile as a team

An optimally prepared, efficient software solution for every task. KUKA function and technology packages breathe life into the KUKA robots. They enable them to carry out particular industry-specific functions within an automation solution. Handling, machining, measuring, or function packages for conveyor synchronization or vision-controlled part detection. KUKA function and technology packages make automation easy.

99.995 % Availability

Robust and low on maintenance, this unbeatable team works non-stop on your success.

KR C4 compact

The small robot control system of the future

More powerful, safer, more flexible, and more intelligent. The KR C4 compact offers the high performance and reliability of the KR C4 technology in a compact design. Its flexible configuration and expansion capability make it a real all-rounder. The number of hardware components, cables and connectors has been significantly reduced and replaced by software-based solutions. The robust, high-quality controller is designed for low maintenance; the temperature-controlled fan technology only switches on briefly when needed, and is barely audible.

_Space-saving

_Robustness

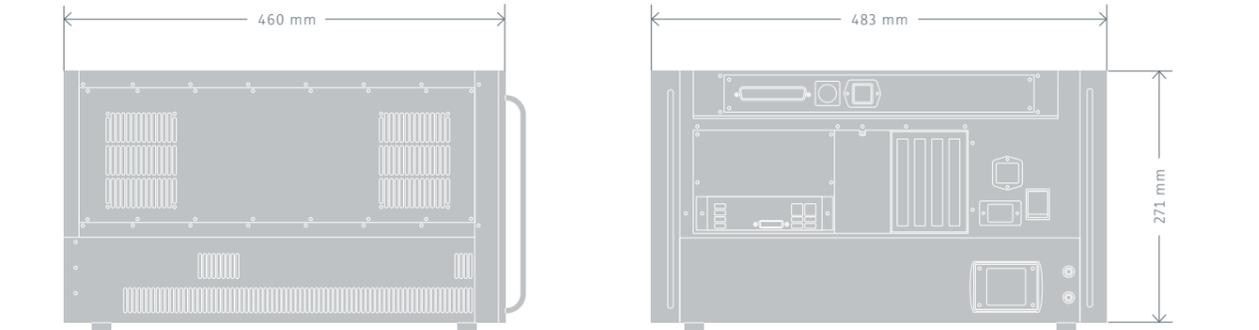
_Universal application



_Communication talent

_Energy-efficient

_All-rounder



Space-saving. The compact dimensions of the housing enable space-saving installation in 19" enclosures or in small protective housings. Despite its compact size, the KR C4 compact offers the entire range of functions of the KR C4 controller.

All-rounder. Safety, Robot, Logic, Motion and ProcessControl – the KR C4 combines everything in a single controller. And allows effortless control of the entire system.

Universal application. The open architecture of the KR C4 compact can control not only KUKA robots but also external axes – for maximum flexibility, scalability, performance and openness, in minimum space.

Communication talent. In addition to its own robot language KRL, the KR C4 also understands the language of the CNC machining world (G-code) and the language of PLCs, enabling it to communicate directly with your Siemens® or Rockwell® controller, for example.

Robustness. The consistent choice of durable components and the well-designed cabinet ensure long-term, reliable operation, even under extreme conditions.

Energy-efficient. The energy management system allows the energy consumption of the controller to be reduced by up to 95 % in standby mode. The improved cooling concept, combined with a temperature-controlled fan, further reduces the power dissipation of the controller, while making operation considerably quieter.

KR C4 compact controller

Type	KR C4 compact
Processor	Multi-core technology
Hard drive	SSD
Interface	USB, EtherNet, DVI-I
Field buses	PROFINET, EtherNet/IP, PROFIBUS, DeviceNet, EtherCAT
Max. number of axes	6+2 (with additional axis box)
Protection rating	IP 20
Dimensions (D x W x H)	460 mm x 483 mm x 271 mm
Weight	33 kg

Power supply connection

Rated supply voltage	200 V to 230 V AC, single-phase, two-phase With grounded neutral (as symmetrical as possible) between the phases used
Permissible tolerance of rated voltage	-10 to +10 %
Mains frequency	50 Hz ± 1 Hz or 60 Hz ± 1 Hz
Mains-side fusing	2x 16 A slow-blowing (1x phase; 1x neutral conductor, optional) or 2x 16 A slow-blowing (2x phase; 1x neutral conductor, optional)

Operating conditions

Ambient temperature	+5 °C to +45 °C
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KUKA smartPAD

Making robot operation really easy

Touch screen. Graphics support. Flexible interaction. The more diverse the robots' abilities become, the greater the importance of intuitive user interfaces for their operation. The new KUKA smartPAD brilliantly demonstrates on a large antireflection touch screen just how simple it can be. Intelligent, interactive dialogs provide the user with those operator control elements that are currently required. This makes work easier, faster, more efficient, and simply smarter all-round.

_Integrated USB connection

_Antireflection touch display

_Universal application



_Hot-pluggable

_Ergonomically optimized

_Haptic jog keys



Simple, intuitive operator control via touch screen



Ergonomic 6D mouse

Universal application. Operate all KUKA robots and KR C4 controllers with the KUKA smartPAD.

Antireflection touch display. Simple operation via the well-lit 8.4" screen with an intuitive user interface.

Ergonomically optimized. Designed to be user-friendly. Built for mobility and its lightweight, just 1,100 grams.

Hot-pluggable. If the KUKA smartPAD is not being used it can be simply unplugged during ongoing operation and used with any other KR C4 controller.

Integrated usb connection. Direct saving and loading of configurations now possible via USB port on the KUKA smartPAD.

Haptic jog keys. The combination of haptic jog keys and a haptically controlled mouse enables intuitive maneuvering with constant visual contact with the robot.

Teach pendant: KUKA smartPAD

Type	KUKA smartPAD
Display	scratch-resistant industrial touch display
Display size	8.4"
Dimensions (W x H x D)	50 mm x 240 mm x 290 mm
Weight	1,100 g

KUKA function and technology packages for the KR C4

KUKA function and technology packages help you to solve specific automation tasks efficiently with minimum programming. KUKA's portfolio of software solutions cover nearly all common areas of application. Using these packages our KUKA system partners implement tailored solutions to meet every customer requirement.



KUKA function and technology packages

KUKA.WorkVisual	Engineering environment for all KUKA robots for system configuration, programming, data backup, diagnosis, and more.
KUKA.Load	Supports the evaluation of the load on a KUKA robot or the selection of a suitable robot for a given load.
KUKA.UserTech	Fast programming of motion and program sequences using freely definable buttons, input masks and parameter lists.
KUKA.ExpertTech	Faster, simpler programming even for non-experts in KRL code via menu-guided command selection.
KUKA.HMI Zenon	Creation of customized, application-specific user interfaces for visualization and operator control without programming knowledge. Display and operation using the touch panel and keys of the KUKA smartPAD.
KUKA.RemoteView	Allows remote access to the robot via a secure Internet connection, thereby offering the possibility of remote diagnosis or start-up support.
KUKA.VirtualRemotePendant	Allows the use of EtherNet communication to run the user interface of the KUKA smartPAD on an external PC and to operate the robot.
KUKA.RobotSensorInterface	Supports simple and flexible interfacing with sensors in the KR C4. It is also possible to integrate a number of channels with hard real-time requirements.
KUKA.VisionTech	"onBoard" vision system including image processing, camera and sensors. Extensive configuration options enable the 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.ForceTorqueControl	Takes account of process forces and torques exerted on the workpiece during machining, and controls and adjusts these as specified in the program sequence. In applications such as grinding, polishing, bending or even assembly, this technology package is an indispensable help.
KUKA.SafeOperation	Flexible programming of safe cooperation between humans and machines. Definition of safe workspaces, velocities, envelopes around robot tools, and cooperation with the operator.
KUKA.SafeRangeMonitoring	Beginners' tool for limiting and monitoring the safety and work areas of the robot. The monitoring and limitation of statically defined axis ranges creates an adequate degree of work safety for many applications.

KUKA function and technology packages

KUKA.Gripper & SpotTech	Programming of grippers and weld guns via easy-to-use inline forms for many industrial applications.
KUKA.ArcTech	For rapid start-up and simple programming of arc welding applications. The complete portfolio of option packages, in combination with sensors and sequence control, enables arc welding at the highest level.
KUKA.LaserTech	A modular, time-saving and easy-to-operate programming support package for laser cutting and laser welding. Both applications can be executed using the same robot – giving maximum flexibility as the workpiece needs to be clamped only once.
KUKA.ServoGun	Enables the operation of electric motor-driven spot weld guns with the KUKA robot controller. Various additional software options allow e.g. the elimination of mechanical gun compensation and other functions.
KUKA.GlueTech	Enables user-friendly programming of dispensing applications such as bonding, seam sealing or application of support seams using inline forms on the KUKA robot controller.
KUKA.RoboTeam	Coordinates and enables the high-precision interaction of a team of robots for handling a shared load or for working together on a moving workpiece.
KUKA.EtherNet KRL	Makes it possible to exchange data with external computers via the EtherNet interface. The robot can function here both as a client and as a server.
KUKA.OPC-Server	Basic technology for standardized data exchange between robots and external controllers for non-real-time information streams. Ideal for interfacing with external visualization and MES systems.
KUKA.PLC Multiprog	Programming environment for an extremely fast Soft PLC conforming to the IEC61131 standard. Expands the functionality of the KR C4 and offers virtually unlimited openness in the programming of automation cells and applications.
KUKA.PLC ProConOS	Runtime system of the KUKA.PLC Multiprog Soft PLC. PLC programs created with KUKA.Multiprog are run directly on the KR C4, with full access to the entire I/O system of the robot. Reading and processing of variables such as axis positions and velocity via function blocks.
KUKA.PLC mxA	Allows direct commanding and positioning of the robot by external controllers (Siemens®, Rockwell®, etc.). The user thus requires no knowledge of robot programming in the KUKA-specific robot language KRL.
KUKA.CNC	Complete software-based CNC implementation for execution of machine tool code (G-code) directly on the robot controller. This turns the robot, with its accuracy and stiffness, into a machining center for path-supported processes.
KUKA.Sim	The simulation programs of KUKA.Sim allow robotic cells to be planned with true-to-life accuracy.



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