KUKA

Industrial robotics_**medium payloads**

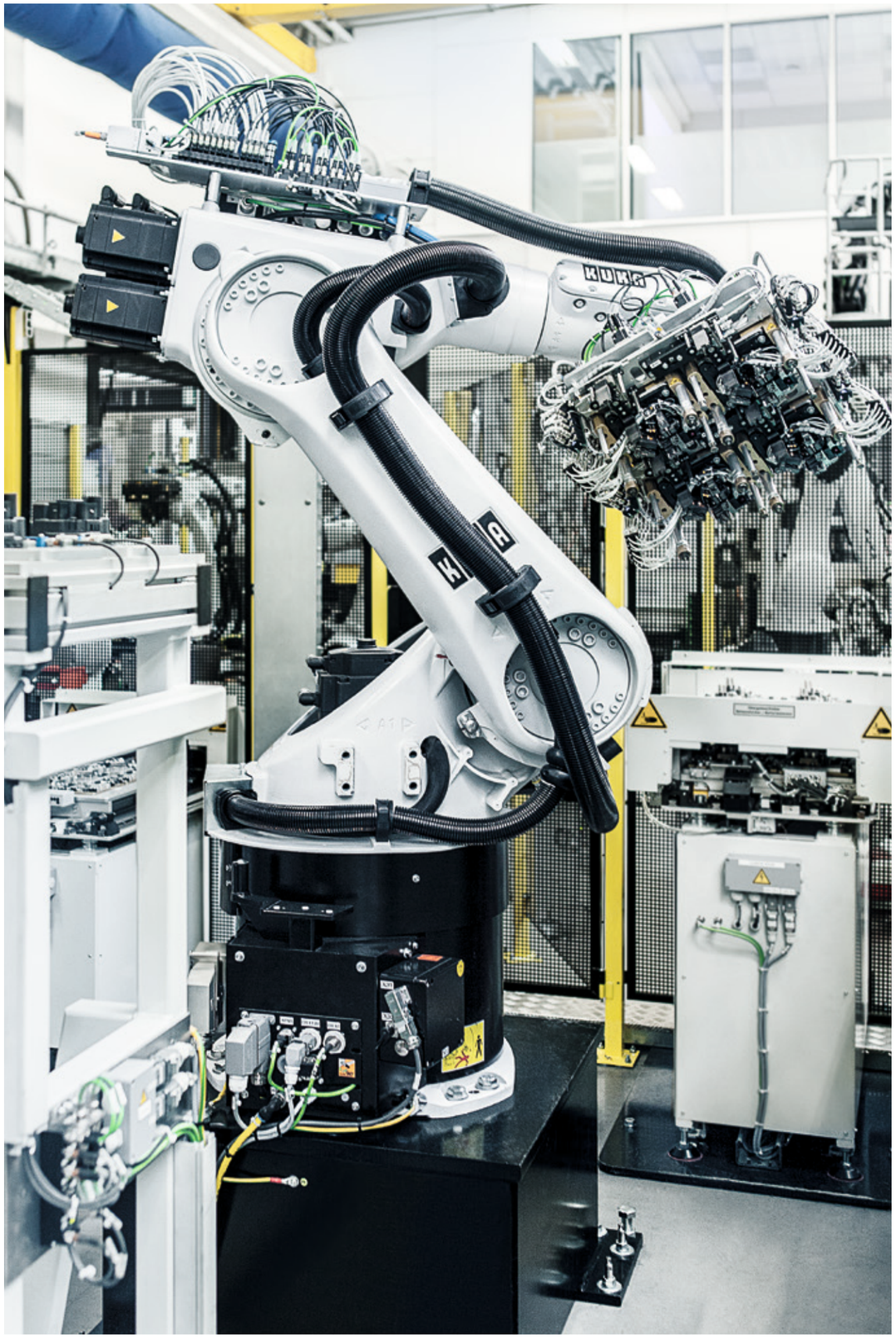
EN

Made for the markets of tomorrow
KUKA robots for medium payloads from 30 kg to 60 kg

KUKA robots for medium payloads perform numerous demanding tasks within automation solutions.

Their streamlined wrist, stiff arm design and compact mounting surfaces make them suitable for a wide range of applications. Working with utmost precision even when subjected to high process forces; makes them ideal for process applications requiring path accuracy, such as milling, drilling, waterjet cutting, laser welding and other laser processing tasks.

They competently handle, polish and assemble components, load and unload machines, and master complex operations such as measuring air currents in a wind tunnel. Whether installed on the ceiling or the floor, or as a shelf-mounted robot, they combine robustness, functional diversity, precision and efficient performance.



KR 60-3 HA robot in an automated grinding process

Component handling in production

To find out more about KUKA robots for medium payloads, scan this QR code with your smartphone.

KR 30-3 in automated handling of metal parts

Loading of injection molding machines with stamping grids in order to manufacture control casings for the automotive industry

The driving force of efficient automation solutions
KUKA robots for medium payloads

Product overview

Robot	KR 30-3		
	KR 60-3	KR 60 L45-3	KR 60 L30-3
	KR 30 L16-2		
Controller		KR C4	
Teach pendant		KUKA smartPAD	

_Robust

_Path accuracy

_Low maintenance

_Flexible

_99.995 % availability

_Space-optimized

_Quality standard

Reach / Payload

3,200 mm				
3,000 mm	E			
2,800 mm	N			
2,600 mm		M		
2,400 mm		D I	L	
2,200 mm		J	C H	K
2,000 mm		A F		B G
	16 kg	30 kg	45 kg	60 kg

A KR 30-3
B KR 60-3
C KR 60 L45-3
D KR 60 L30-3
E KR 30 L16-2

F KR 30-3 HA
G KR 60-3 HA
H KR 60 L45-3 HA
I KR 60 L30-3 HA

J KR 30-4 KS
K KR 60-4 KS
L KR 60 L45-4 KS
M KR 60 L30-4 KS
N KR 60 L16-2 KS

Low maintenance. KUKA robots offer the longest maintenance intervals on the market, at around 20,000 operating hours, ensuring maximum productivity.

Robust. Systematically designed for durability, KUKA robots operate reliably over long periods even under extreme conditions.

Quality Standard. To ensure a good return on investments over many years, KUKA bestows the greatest importance to quality – in every component, gear unit and axis.

99.995 % availability. KUKA robots for medium payloads allow reliable long-term planning and cost estimation.

Path accuracy. KUKA robots set standards with their unparalleled precision – in robot-based welding,for example – while attaining utmost repeatability and unbeatable cycle times.

Flexible. The functional diversity of KUKA robots means there are no limits on their application potential. In addition, they can be individually adapted, e.g. by means of arm extensions.

Space-optimized. The streamlined contour creates space even in confined areas, while KUKA robots cover an unusually large work envelope.

KR 30-3

Reliable planning. As a result of high diversity of variants, suitable robots are available for every application.

Precisely programmable. Minimal disruptive contours allow efficient offline programming.

Optimized for process forces. High stiffness resulting from FEM-optimized structure compensates for process forces generated.

Space-saving. Small footprint allows use even in confined cell layouts.

Fast and accurate. Optimally matched motors and gear units ensure high performance in terms of cycle times and accuracy.

KR 30-3	KR 30-3
Max. reach	2,033 mm
Rated payload	30 kg
Rated suppl. load, arm/link arm/rot. column	35 kg/–/–
Rated total load	65 kg
Pose repeatability	±0.06 mm
Number of axes	6
Mounting position	Floor, ceiling
Variant	F
Robot footprint	850 mm x 950 mm
Weight (excluding controller), approx.	665 kg

Axis data / Range of motion		Speed with rated payload 30 kg
Axis 1 (A1)	+/-185°	140°/s
Axis 2 (A2)	+35°/-135°	126°/s
Axis 3 (A3)	+158°/-120°	140°/s
Axis 4 (A4)	+/-350°	260°/s
Axis 5 (A5)	+/-119°	245°/s
Axis 6 (A6)	+/-350°	322°/s

Operating conditions

Ambient temperature	+10 °C to +55 °C

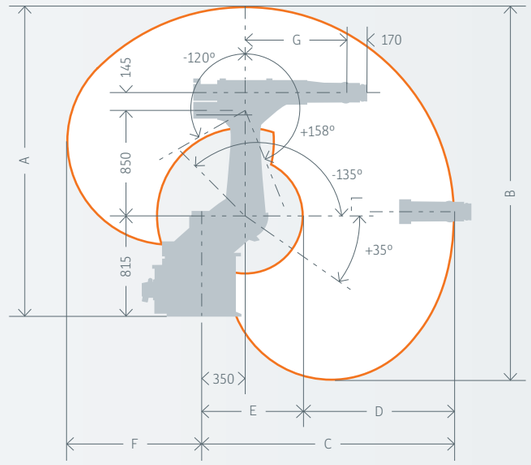
Protection rating

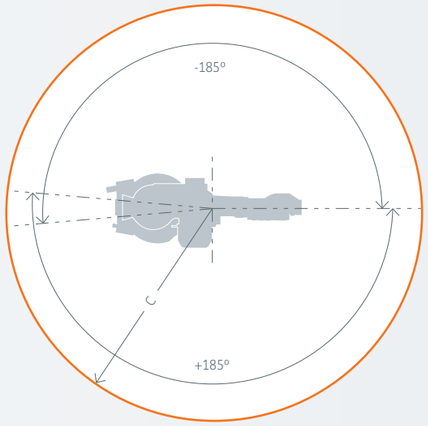
Protection rating, robot	IP 65
Protection rating, in-line wrist	IP 65
Protection rating, foundry in-line wrist	IP 67

Controller	KR C4
Teach pendant	KUKA smartPAD

F Variant for environments with a high degree of fouling and high temperatures

Work envelope [1]	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Volume
KR 30-3	2,498 mm	3,003 mm	2,033 mm	1,218 mm	815 mm	1,084 mm	820 mm	27.2 m³





[1] Relative to intersection of axes 4/5.

KR 60-3

Reliable planning. As a result of high diversity of variants, suitable robots are available for every application.

Precisely programmable. Minimal disruptive contours allow efficient offline programming.

Optimized for process forces. High stiffness resulting from FEM-optimized structure compensates for process forces generated.

Space-saving. Small footprint allows use even in confined cell layouts.

Fast and accurate. Optimally matched motors and gear units ensure high performance in terms of cycle times and accuracy.

KR 60-3	KR 60-3	KR 60 L45-3	KR 60 L30-3
Max. reach	2,033 mm	2,230 mm	2,429 mm
Rated payload	60 kg	45 kg	30 kg
Rated suppl. load, arm/link arm/rot. col.	35 kg /–/–	35 kg /–/–	35 kg /–/–
Rated total load	95 kg	80 kg	65 kg
Pose repeatability	±0.06 mm	±0.06 mm	±0.06 mm
Number of axes	6	6	6
Mounting position	Floor, ceiling	Floor, ceiling	Floor, ceiling
Variant	F	F	F
Robot footprint	850 mm x 950 mm	850 mm x 950 mm	850 mm x 950 mm
Weight (excluding controller), approx.	665 kg	671 kg	679 kg

Axis data / Range of motion		Speed with rated payload 60 kg	Speed with rated payload 45 kg	Speed with rated payload 30 kg
Axis 1 (A1)	+/-185°	128°/s	128°/s	128°/s
Axis 2 (A2)	-35°/-135°	102°/s	102°/s	102°/s
Axis 3 (A3)	+158°/-120°	128°/s	128°/s	128°/s
Axis 4 (A4)	+/-350°	260°/s	260°/s	260°/s
Axis 5 (A5)	+/-119°	245°/s	245°/s	245°/s
Axis 6 (A6)	+/-350°	322°/s	322°/s	322°/s

Operating conditions

Ambient temperature	+10 °C to +55 °C

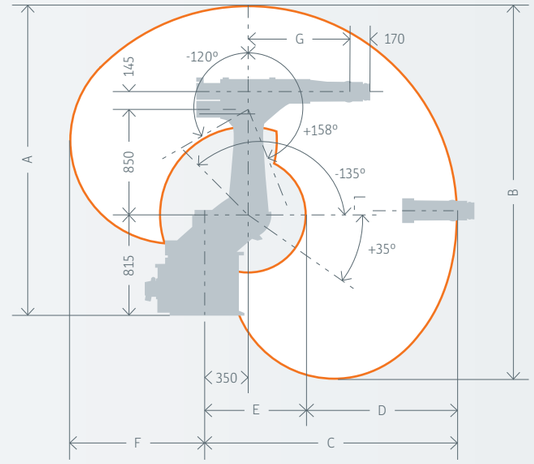
Protection rating

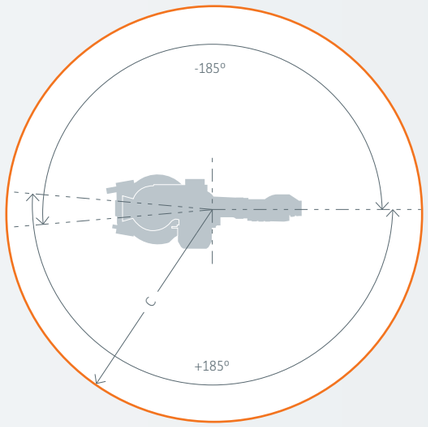
Protection rating, robot	IP 65
Protection rating, in-line wrist	IP 65
Protection rating, foundry in-line wrist	IP 67

Controller	KR C4
Teach pendant	KUKA smartPAD

F Variant for environments with a high degree of fouling and high temperatures

Work envelope [1]	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Volume
KR 60-3	2,498 mm	3,003 mm	2,033 mm	1,218 mm	815 mm	1,084 mm	820 mm	27.2 m³
KR 60 L45-3	2,695 mm	3,398 mm	2,230 mm	1,362 mm	868 mm	1,283 mm	1,020 mm	36.9 m³
KR 60 L30-3	2,984 mm	3,795 mm	2,429 mm	1,446 mm	983 mm	1,480 mm	1,220 mm	47.8 m³





[1] Relative to intersection of axes 4/5.

KR 30 L16-2

Long reach. Enormous workspace due to long arm and link arm opens a whole new range of production possibilities.

Space-optimized. Optimal accessibility, even in confined cells, due to streamlined design of the robot – ideal for bonding or sealing tasks.

Individual. Choice of floor-mounted or ceiling-mounted versions allows optimal use in customized system layouts.

Durable. Proven standard components in first-class KUKA quality stand for reliability and durability.

KR 30 L16-2	KR 30 L16-2
Max. reach	3,102 mm
Rated payload	16 kg
Rated suppl. load, arm/link arm/rot. column	35 kg /–/–
Rated total load	51 kg
Pose repeatability	±0.07 mm
Number of axes	6
Mounting position	Floor, ceiling
Variant	F
Robot footprint	850 mm x 950 mm
Weight (excluding controller), approx	700 kg

Axis data / Range of motion		Speed with rated payload 16 kg
Axis 1 (A1)	+/-185°	100°/s
Axis 2 (A2)	+35°/-135°	80°/s
Axis 3 (A3)	+158°/-120°	80°/s
Axis 4 (A4)	+/-350°	230°/s
Axis 5 (A5)	+/-130°	165°/s
Axis 6 (A6)	+/-350°	249°/s

Operating conditions

Ambient temperature	+10 °C to +55 °C

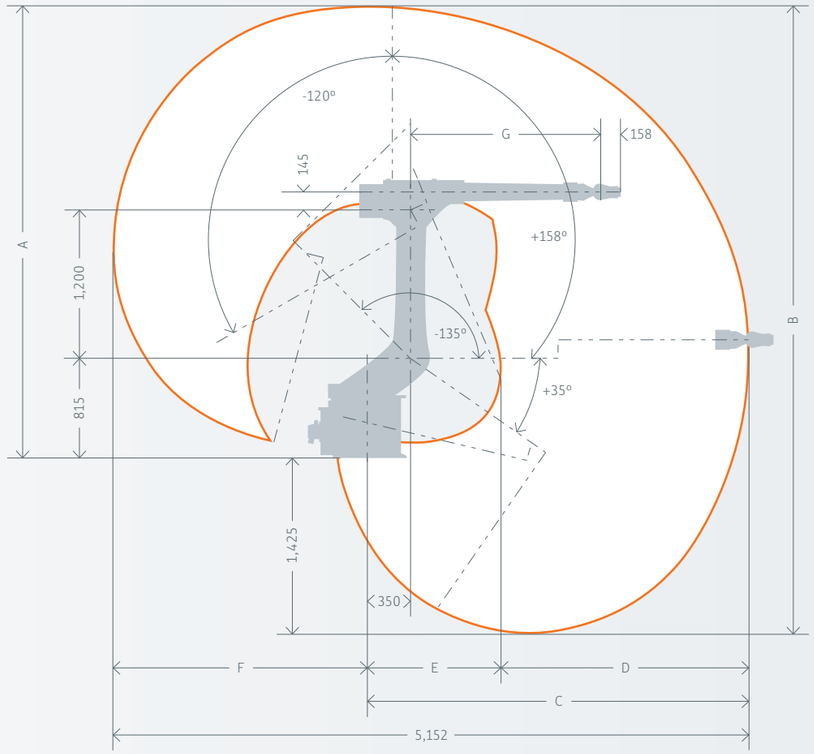
Protection rating

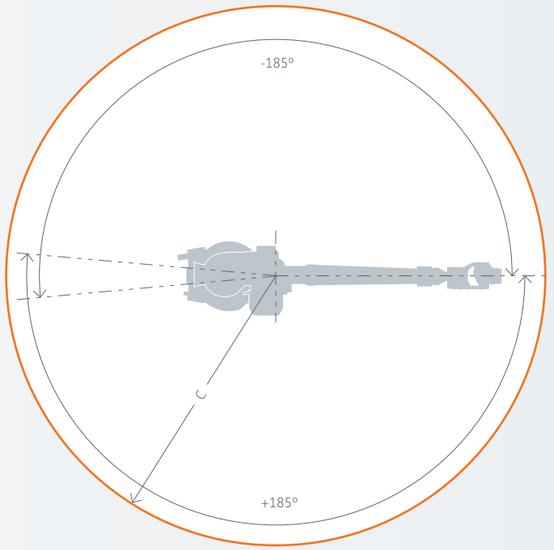
Protection rating, robot	IP 65
Protection rating, in-line wrist	IP 65
Protection rating, foundry in-line wrist	IP 67

Controller	KR C4
Teach pendant	KUKA smartPAD

F Variant for potentially explosive environments

Work envelope [1]	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Volume
KR 30 L16-2	3,567 mm	4,992 mm	3,102 mm	2,017 mm	1,085 mm	2,050 mm	1,545 mm	104.5 m³





[1] Relative to intersection of axes 4/5.

The high-accuracy robots
KUKA HA-robots for medium payloads

Product overview

Robot	KR 30-3 HA		
	KR 60-3 HA	KR 60 L45-3 HA	KR 60 L30-3 HA
Controller	KR C4		
Teach pendant	KUKA smartPAD		

_Robust

_Path accuracy

_Low maintenance

_Path repeatability

_99.995 % availability

_Pose repeatability

Reach / Payload

3,200 mm				
3,000 mm	E			
2,800 mm	N			
2,600 mm		M		
2,400 mm		D I	L	
2,200 mm		J	C H	K
2,000 mm		A F		B G
	16 kg	30 kg	45 kg	60 kg

A KR 30-3
B KR 60-3
C KR 60 L45-3
D KR 60 L30-3
E KR 30 L16-2

F KR 30-3 HA
G KR 60-3 HA
H KR 60 L45-3 HA
I KR 60 L30-3 HA

J KR 30-4 KS
K KR 60-4 KS
L KR 60 L45-4 KS
M KR 60 L30-4 KS
N KR 60 L16-2 KS

Path accuracy. KUKA robots set standards with their unparalleled precision – for example, in welding and machining – while attaining utmost repeatability and unbeatable cycle times.

Path repeatability. Highly accurate robot arm with long reach enables linear path repeatability. Optimal for laser applications and other tasks in which utmost precision is required.

Pose repeatability. Special gear units and robots with individual absolutely accurate calibration ensure ideal process results and pose repeatability of ±0.05 mm.

Low maintenance. KUKA robots offer the longest maintenance intervals on the market, at around 20,000 operating hours, ensuring virtually uninterrupted productivity.

Robust. Systematically optimized for durability, the design provides for consistent reliable operation even under extreme conditions.

99.995 % availability. KUKA robots for medium payloads allow reliable long-term planning and cost estimation.

KR 30-3 HA

Highly accurate. Special gear units with maximum accuracy ensure optimal process results and extremely high pose and path repeatability.

Efficient. High absolute accuracy and minimal disruptive contours allow optimal offline programming.

Optimized for process forces. High stiffness resulting from FEM-optimized structure compensates for process forces generated.

KR 30-3 HA	KR 30-3 HA
Max. reach	2,033 mm
Rated payload	30 kg
Rated suppl. load, arm/link arm/rot. column	35 kg /–/–
Rated total load	65 kg
Pose repeatability	±0.05 mm
Number of axes	6
Mounting position	Floor, ceiling
Variant	–
Robot footprint	850 mm x 950 mm
Weight (excluding controller), approx.	665 kg

Axis data / Range of motion		Speed with rated payload 30 kg
Axis 1 (A1)	+/-185°	140°/s
Axis 2 (A2)	+35°/-135°	126°/s
Axis 3 (A3)	+158°/-120°	140°/s
Axis 4 (A4)	+/-350°	260°/s
Axis 5 (A5)	+/-119°	245°/s
Axis 6 (A6)	+/-350°	322°/s

Operating conditions

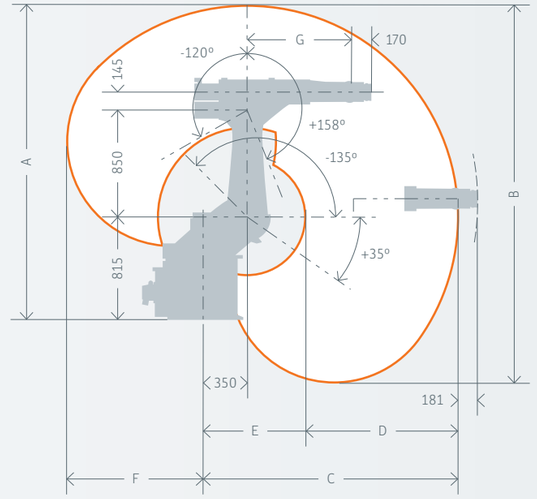
Ambient temperature	+10 °C to +55 °C

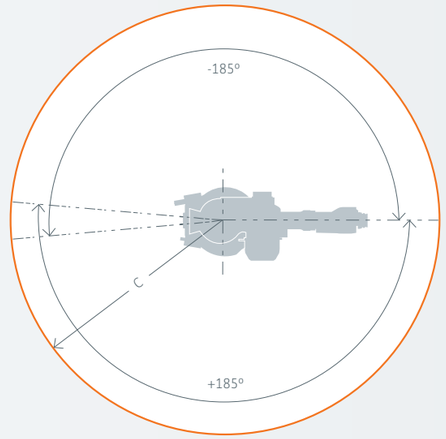
Protection rating

Protection rating, robot	IP 65
Protection rating, in-line wrist	IP 65

Controller	KR C4
Teach pendant	KUKA smartPAD

Work envelope [1]	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Volume
KR 30-3 HA	2,498 mm	3,003 mm	2,033 mm	1,218 mm	815 mm	1,084 mm	820 mm	27.2 m³





[1] Relative to intersection of axes 4/5.

KR 60-3 HA

Highly accurate. Special gear units with maximum accuracy ensure optimal process results and extremely high pose and path repeatability.

Efficient. High absolute accuracy and minimal disruptive contours allow optimal offline programming.

Optimized for process forces. High stiffness resulting from FEM-optimized structure compensates for process forces generated.

KR 60-3 HA	KR 60-3 HA	KR 60 L45-3 HA	KR 60 L30-3 HA
Max. reach	2,033 mm	2,230 mm	2,429 mm
Rated payload	60 kg	45 kg	30 kg
Rated suppl. load, arm/link arm/rot. col.	35 kg /–/–	35 kg /–/–	35 kg /–/–
Rated total load	95 kg	80 kg	65 kg
Pose repeatability	±0.05 mm	±0.05 mm	±0.05 mm
Number of axes	6	6	6
Mounting position	Floor, ceiling	Floor, ceiling	Floor, ceiling
Variant	–	–	–
Robot footprint	850 mm x 950 mm	850 mm x 950 mm	850 mm x 950 mm
Weight (excluding controller), approx.	665 kg	671 kg	679 kg

Axis data / Range of motion		Speed with rated payload 60 kg	Speed with rated payload 45 kg	Speed with rated payload 30 kg
Axis 1 (A1)	+/-185°	128°/s	128°/s	128°/s
Axis 2 (A2)	+35°/-135°	102°/s	102°/s	102°/s
Axis 3 (A3)	+158°/-120°	128°/s	128°/s	128°/s
Axis 4 (A4)	+/-350°	260°/s	260°/s	260°/s
Axis 5 (A5)	+/-119°	245°/s	245°/s	245°/s
Axis 6 (A6)	+/-350°	322°/s	322°/s	322°/s

Operating conditions

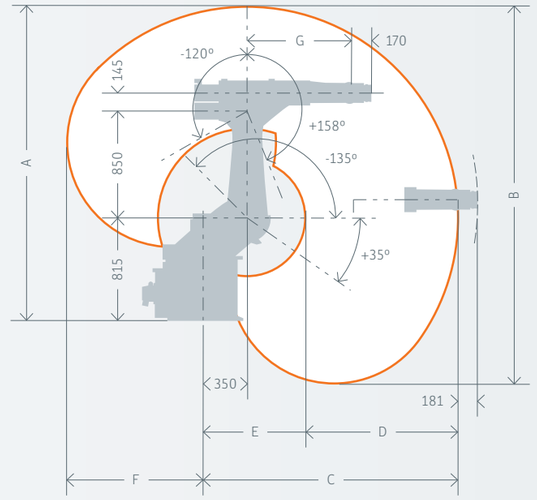
Ambient temperature	+10 °C to +55 °C

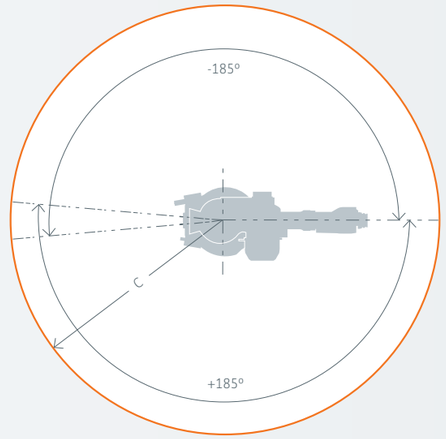
Protection rating

Protection rating, robot	IP 65
Protection rating, in-line wrist	IP 65

Controller	KR C4
Teach pendant	KUKA smartPAD

Work envelope [1]	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Volume
KR 60-3 HA	2,498 mm	3,003 mm	2,033 mm	1,218 mm	815 mm	1,084 mm	820 mm	27.2 m³
KR 60 L45-3 HA	2,695 mm	3,398 mm	2,230 mm	1,362 mm	868 mm	1,283 mm	1,020 mm	36.9 m³
KR 60 L30-3 HA	2,894 mm	3,795 mm	2,429 mm	1,445 mm	983 mm	1,480 mm	1,220 mm	47.8 m³





[1] Relative to intersection of axes 4/5.

High-end performance
KUKA shelf-mounted robots for medium payloads

Product overview

Shelf-mounted robot	KR 30-4 KS		
	KR 60-4 KS	KR 60 L45-4 KS	KR 60 L30-4 KS
	KR 60 L16-2 KS		
Controller		KR C4	
Teach pendant		KUKA smartPAD	

Reach / Payload

	16 kg	30 kg	45 kg	60 kg
3,200 mm				
3,000 mm	E			
2,800 mm	N			
2,600 mm		M		
2,400 mm		D I	L	
2,200 mm		J	C H	K
2,000 mm		A F		B G

A KR 30-3
B KR 60-3
C KR 60 L45-3
D KR 60 L30-3
E KR 30 L16-2

F KR 30-3 HA
G KR 60-3 HA
H KR 60 L45-3 HA
I KR 60 L30-3 HA

J KR 30-4 KS
K KR 60-4 KS
L KR 60 L45-4 KS
M KR 60 L30-4 KS
N KR 60 L16-2 KS

Versatile. The intelligent payload and reach intervals allow simple, reliable planning. KUKA also offers shelf-mounted robots covering a payload range from 16 kg to 270 kg.

Light. KUKA shelf-mounted robots stand out for low weight. They can be installed directly on machines with minimum effort, saving space.

Deep Reach. KUKA shelf-mounted robots are designed for an especially large downward reach, optimum access the workspace from above. Due to their low height, they require little space above the robot base.

Fast. Lightweight, KUKA shelf-mounted robots achieve high dynamic performance and very short cycle times. Enabling higher productivity and cost-effectiveness with rapid payback.

Reliable Planning. Each KUKA robot family shares an identical mounting base hole pattern. This allows different shelf-mounted robots to be used on machines of different sizes – without any additional planning measures.

KR 30-4 KS

Process-optimized. Axis 2 is very low, enlarging the workspace downward – ideal for tending machines.

Flexible. Numerous variants for a wide range of different payloads and reaches ensure maximum planning security.

Powerful. High performance due to powerful drives in the main axes.

Heat-resistant. Also available in the Foundry variant for work at high temperatures, e.g. with metal-casting machines.

KR 30-4 KS	KR 30-4 KS
Max. reach	2,233 mm
Rated payload	30 kg
Rated suppl. load, arm/link arm/rot. column	35 kg / – / –
Rated total load	65 kg
Pose repeatability	±0.06 mm
Number of axes	6
Mounting position	Floor
Variant	F
Robot footprint	928 mm x 928 mm
Weight (excluding controller), approx.	600 kg

Axis data / Range of motion		Speed with rated payload 30 kg
Axis 1 (A1)	+/-150°	140°/s
Axis 2 (A2)	+75°/-105°	137°/s
Axis 3 (A3)	+158°/-120°	166°/s
Axis 4 (A4)	+/-350°	260°/s
Axis 5 (A5)	+/-119°	245°/s
Axis 6 (A6)	+/-350°	322°/s

Operating conditions

Ambient temperature	+10 °C to +55 °C

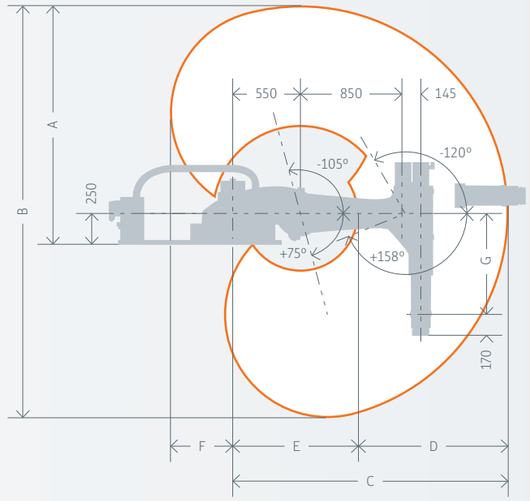
Protection rating

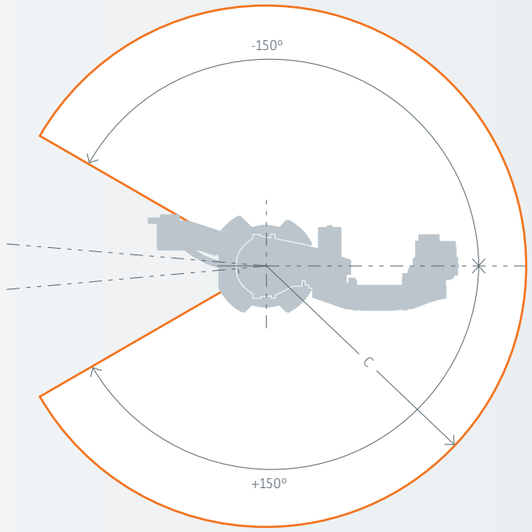
Protection rating, robot	IP 65
Protection rating, in-line wrist	IP 65
Protection rating, foundry in-line wrist	IP 67

Controller	KR C4
Teach pendant	KUKA smartPAD

F Variant for environments with a high degree of fouling and high temperatures

Work envelope [1]	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Volume
KR 30-4 KS	1,933 mm	3,335 mm	2,233 mm	1,218 mm	1,015 mm	503 mm	820 mm	29.3 m³





[1] Relative to intersection of axes 4/5.

KR 60-4 KS

Process-optimized. Axis 2 is very low, enlarging the workspace downward – ideal for tending machines.

Flexible. Numerous variants for a wide range of different payloads and reaches ensure maximum planning security.

Powerful. High performance due to powerful drives in the main axes.

Heat-resistant. Also available in the Foundry variant for work at high temperatures, e.g. with metal-casting machines.

KR 60-4 KS	KR 60-4 KS	KR 60 L45-4 KS	KR 60 L30-4 KS
Max. reach	2,233 mm	2,430 mm	2,628 mm
Rated payload	60 kg	45 kg	30 kg
Rated suppl. load, arm/link arm/rot. col.	35 kg /–/–	35 kg /–/–	35 kg /–/–
Rated total load	95 kg	80 kg	65 kg
Pose repeatability	±0.06 mm	±0.06 mm	±0.06 mm
Number of axes	6	6	6
Mounting position	Floor	Floor	Floor
Variant	F	F	F
Robot footprint	928 mm x 928 mm	928 mm x 928 mm	928 mm x 928 mm
Weight (excluding controller), approx.	600 kg	610 kg	615 kg

Axis data / Range of motion		Speed with rated payload 60 kg	Speed with rated payload 45 kg	Speed with rated payload 30 kg
Axis 1 (A1)	+/-150°	138°/s	138°/s	138°/s
Axis 2 (A2)	+75°/-105°	130°/s	130°/s	130°/s
Axis 3 (A3)	+158°/-120°	166°/s	166°/s	166°/s
Axis 4 (A4)	+/-350°	260°/s	260°/s	260°/s
Axis 5 (A5)	+/-119°	245°/s	245°/s	245°/s
Axis 6 (A6)	+/-350°	322°/s	322°/s	322°/s

Operating conditions

Ambient temperature	+10 °C to +55 °C

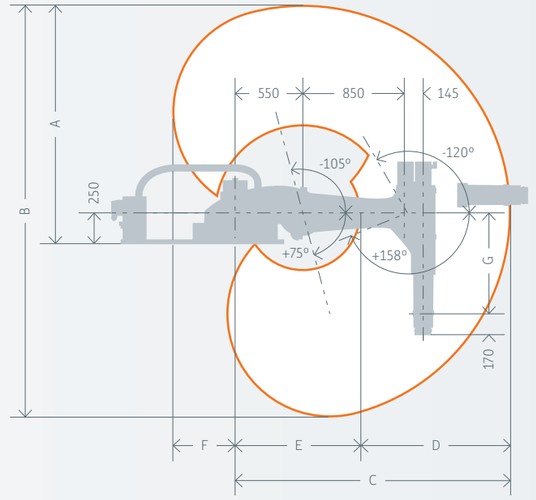
Protection rating

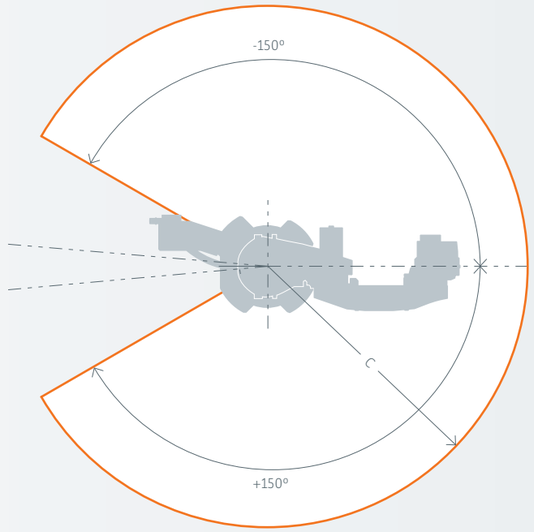
Protection rating, robot	IP 65
Protection rating, in-line wrist	IP 65
Protection rating, foundry in-line wrist	IP 67

Controller	KR C4
Teach pendant	KUKA smartPAD

F Variant for environments with a high degree of fouling and high temperatures

Work envelope [1]	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Volume
KR 60-4 KS	1,933 mm	3,335 mm	2,233 mm	1,218 mm	1,015 mm	503 mm	820 mm	29.3 m³
KR 60 L45-4 KS	2,130 mm	3,750 mm	2,430 mm	1,362 mm	1,068 mm	709 mm	1,020 mm	38.9 m³
KR 60 L30-4 KS	2,330 mm	4,130 mm	2,628 mm	1,445 mm	1,183 mm	900 mm	1,220 mm	47.9 m³





[1] Relative to intersection of axes 4/5.

KR 60 L16-2 KS

Versatile. The intelligent payload and reach intervals allow simple, reliable planning. KUKA also offers shelf-mounted robots covering a payload range from 16 kg to 270 kg.

Light. KUKA shelf-mounted robots stand out for their low weight. They can be installed directly on machines with minimum effort, saving space.

Deep Reach. KUKA shelf-mounted robots are designed for an especially large downward reach, optimum access the workspace from above. Due to their low height, they require little space above the robot base.

Fast. Lightweight, KUKA shelf-mounted robots achieve high dynamic performance and very short cycle times. Enables higher productivity and cost-effectiveness with rapid payback.

Reliable Planning. Each KUKA robot family shares an identical mounting base hole pattern. This allows different shelf-mounted robots to be used on machines of different sizes – without any additional planning measures.

KR 60 L16-2 KS	KR 60 L16-2 KS
Max. reach	2,952 mm
Rated payload	16 kg
Rated suppl. load, arm/link arm/rot. column	35 kg /–/–
Rated total load	51 kg
Pose repeatability	±0.06 mm
Number of axes	6
Mounting position	Floor
Variant	–
Robot footprint	500 mm x 500 mm
Weight (excluding controller), approx.	650 kg

Axis data / Range of motion		Speed with rated payload 16 kg
Axis 1 (A1)	+/-150°	103°/s
Axis 2 (A2)	+75°/-115°	88°/s
Axis 3 (A3)	+158°/-120°	81°/s
Axis 4 (A4)	+/-350°	230°/s
Axis 5 (A5)	+/-130°	165°/s
Axis 6 (A6)	+/-350°	249°/s

Operating conditions

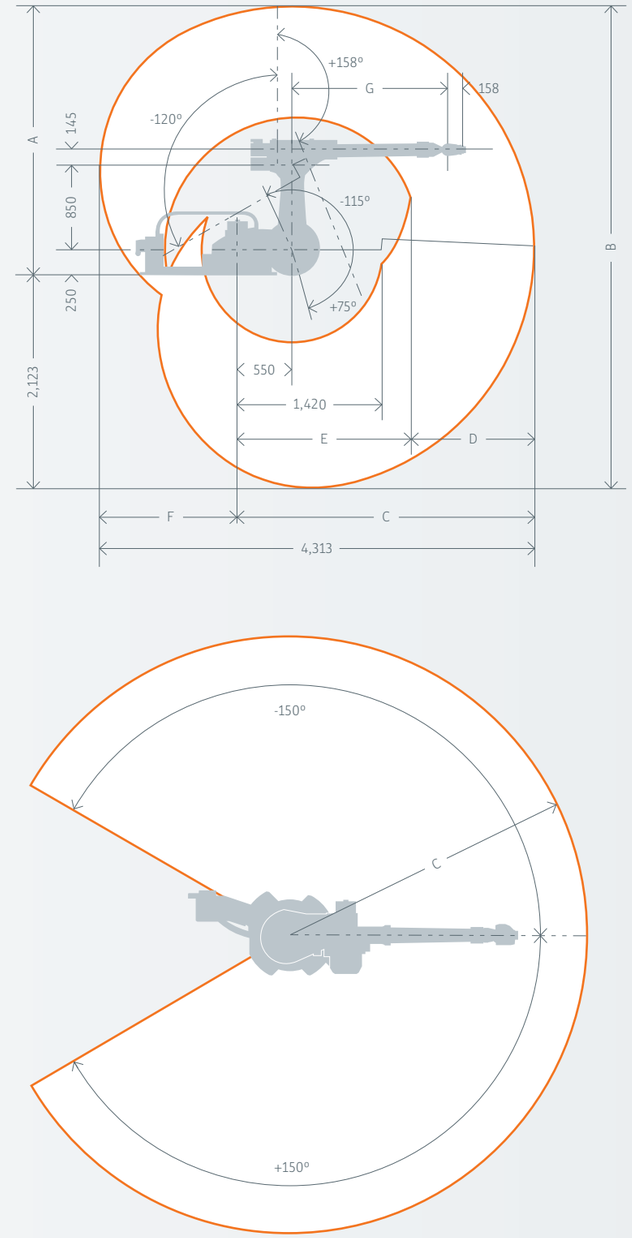
Ambient temperature	+10 °C to +55 °C

Protection rating

Protection rating, robot	IP 65
Protection rating, in-line wrist	IP 65

Controller	KR C4
Teach pendant	KUKA smartPAD

Work envelope [1]	Dimensions A	Dimensions B	Dimensions C	Dimensions D	Dimensions E	Dimensions F	Dimensions G	Volume
KR 60 L16-2 KS	2,652 mm	4,775 mm	2,952 mm	1,235 mm	1,717 mm	1,361 mm	1,545 mm	77 m³



[1] Relative to intersection of axes 4/5.

KL 1000-2

Powerful. Additional high-speed variant for tasks requiring extreme speed and short cycle times.

Flexible. Long travel extends the work envelope by several times the reach of the robot. The linear units function as external axes, dispensing with the need for an additional controller.

Versatile. Floor-mounted and ceiling-mounted variants are available, and protective cover for keeping out dirt during tasks in harsh environments.

Positionally Accurate. Up to four robots can be operated on a linear axis. Multiple robot positions on the linear axis allow optimal adaptation to existing requirements and workspaces.

Productive. Moving workpieces/tools with additional carriages, driven or non-driven (tender carriages) help to shorten cycle times.

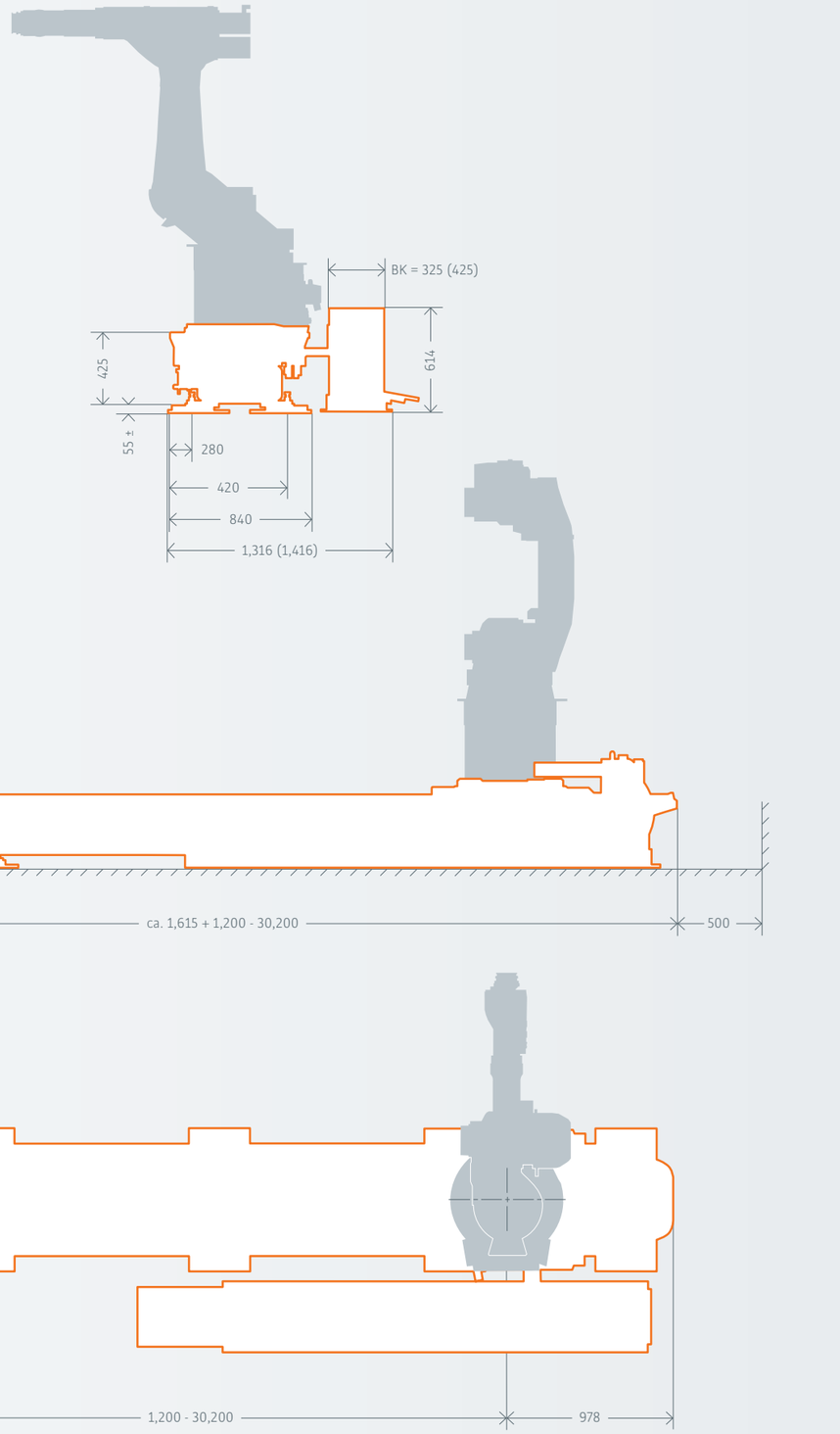
Linear unit	KL 1000-2	KL 1000-2 S
Number of carriages	4	4
Maximum rated travel	30,200 mm	30,200 mm
Maximum velocity	1.89 m/s	2.35 m/s
Pose repeatability	< ±0.02 mm	< ±0.02 mm
Number of axes	1	1
Variant	CV	CV
Mounting position	Floor, ceiling	Floor, ceiling
Mass of carriage	320 kg	320 kg
Mass of rated payload	1,000 kg	1,000 kg
Mass of beam per meter	300 kg	300 kg
Minimum rated travel	1,200 mm	1,200 mm
Gradation of rated travel	500 mm	500 mm
Transmission of force	Rack	Rack

Operating conditions	Specifications for the mechanical unit
Ambient temperature	+10 °C to +55 °C

Controller	KR C4
Teach pendant	KUKA smartPAD

Compatibility	Robots of the medium payload category (30 to 60 kg)
	KR 30-3, KR 30 L16-2, KR 30-3 HA, KR 30-4 KS
	KR 60-3, KR 60 L45-3, KR 60 L30-3
	KR 60-3 HA, KR 60 L45-3 HA, KR 60 L30-3 HA
	KR 60-4 KS, KR 60 L30-4 KS, KR 60 L16-2 KS, KR 60 L45-4 KS

CV Covered version



Faster as a team

No matter which robot you opt for KUKA offers you the matching system components. KUKA robots embody all the essential characteristics of future-oriented robot technology. KUKA robots are more reliable and more flexible than ever with the ability to master heavy loads and long reaches with extreme precision. Thanks to an outstanding availability of nearly 100 %, KUKA robots make the automation processes easier than ever before.

Safer as a team

KR C4 – the control system of the future. More powerful and safer, with more flexibility. Its open architecture can manage all kinematic systems and even complete production lines. The KR C4 provides a firm foundation for the automation of tomorrow. This significantly reduces your costs in automation for integration and maintenance. At the same time the long-term efficiency and flexibility of the systems are increased. The KR C4 gives you the necessary openness to meet the requirements of tomorrow's markets.

Simpler as a team

The simplest way of operating robots. Touch screen. Graphics support. Flexible interaction. The large touch screen of the KUKA smartPAD allows operation of both 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. Gluing, moving, machining, measuring, handling or working together with humans or other synchronized robots: 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
The control system of the future

More powerful, safer, more flexible, and more intelligent. The KR C4 has been created for the automation of today and tomorrow. Thanks to its open architecture it is a master of simple integration. It can communicate in a wide range of programming languages and is ideally suited to the control of KUKA manipulators. It can carry out a vast range of tasks, be used for robots of all payload categories, and control entire production lines. With the KR C4 all integrated controllers, SafetyControl, RobotControl, MotionControl, and LogicControl have a joint database and infrastructure for maximum performance, scalability, and flexibility.

_±0.002 sec I/O response time

_Universal application

_For all payloads

_Allrounder

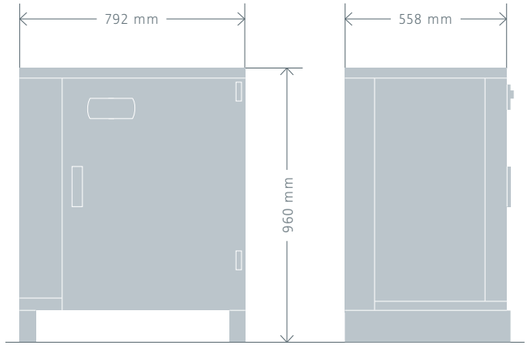
_Energy-efficient

_Communication talent

_Robustness

Increased system availability through systematic reduction of hardware, cables and connectors

The passive heat exchange system, 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.



Allrounder. Safety, Robot, Logic and MotionControl – the KR C4 combines everything in a single controller allowing effortless control of the entire system.

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

For all payloads. The KR C4 is the uniform controller for all KUKA robots, ranging from the low to high payload range categories.

Communication talent. In addition to its own robot language KRL, the KR C4 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.

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

±0.002 sec I/O response time. Secure data exchange measured in milliseconds forms the basis for new safety concepts in human-machine cooperation.

Energy-efficient. The new energy management system allows the energy consumption of the controller to be reduced by up to 95 % [1] 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 controller

Dimensions (H x W x D)	960 x 792 x 558 mm
Processor	MultiCore-technology
Hard drive	SSD
Interface	USB3.0, GbE, DVI-D, Display Port
Number of axes (max.)	9
Protection rating	IP 54
Weight	150 kg

Power supply connection

Mains frequency	49 to 61 Hz
Rated supply voltage	AC 3 x 208 V to 3 x 575 V
w/o transformer	AC 3 x 380 / 400 / 440 / 480 V
Permissible tolerance of rated voltage	-10 to +10 %
Mains-side fusing	min. 3 x 25 A slow-blowing, max. 3 x 32 A slow-blowing

Operating conditions

Ambient temperature	+5 °C to +45 °C
Ambient temperature with cooling unit	optionally to +50 °C

[1] In standby mode and Ecomode.

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 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.

Simple, intuitive operator control via touch screen

Ergonomic 6D mouse

_Integrated USB connection

_Antireflection touch display

_Universal application

_Hot-pluggable

_Ergonomically optimized

_Haptic jog keys

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 g.

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

Display	scratch-resistant industrial touch display
Display size	8.4"
Dimensions (H x W x D)	240 mm x 290 mm x 50 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.

www.kuka.com/contacts

www.facebook.com/KUKA.Robotics

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