



Fraunhofer

TESTED[®]
DEVICE

KUKA Deutschland GmbH
KR 20 R1810 CR

Report No. KU 2507-1650

DUPLICATE

Statement of
Qualification

Single product
Electrical
Resistance

Customer	KUKA Deutschland GmbH Zugspitzstrasse 140 86165 Augsburg Germany
Tested product	
Category:	Automation Components
Subcategory:	Robotics
Product name:	KR 20 R1810 CR (manufacturing date: 8/2025; color: white; article number: 0010027484; serial number: 457893; weight: 274kg; max. payload: 20kg; range: 1831 mm)

Electrical resistance measurements at representative points (resistance to groundable point (R_{gp}))

Standards/guidelines:	IEC 61340-2-3, -5-1 The norms stated generally refer to the version valid at the time of the tests.
Test equipment:	<ul style="list-style-type: none">Data acquisition:<ul style="list-style-type: none">Type: MetrISO 3000..... Wolfgang Warmbier GmbH & Co. KG
Test environment parameters:	<ul style="list-style-type: none">Cleanroom Air Cleanliness Class (according to ISO 14644-1):..... ISO 1Airflow velocity:..... 0.45 m/sAirflow pattern:..... vertical laminar flowTemperature: 22 °C ± 0.5 °CRelative humidity: 45 % ± 5 %
Test procedure parameters:	<ul style="list-style-type: none">Insulating support:<ul style="list-style-type: none">Model:..... 4x 2 insulation cylinders with centering collar..... total insulation resistance > 10¹³ ΩMaterial: polytetrafluorethyleneContact points:..... metallic flange for mountable toolsGroundable points on the robot base

Test result / Classification

The robot KR 20 R1810 CR was examined for its electrical resistance at representative points in accordance with IEC 61340-2-3.
The resistance to groundable point (R_{gp1}) and (R_{gp2}) values obtained from the test pieces lies within the limits of the limiting value of 1 x 10⁹ Ω required by IEC 61340-5-1 for ESD protective elements.

Measuring point	Operating voltage [V]	Resistance to groundable point R_{gp1} [Ω]	Resistance to groundable point R_{gp2} [Ω]	Compliance with limit value as per IEC 61340-5-1
Contact point 1	10	< 1 x 10 ³	< 1 x 10 ³	fulfilled
Contact point 2	10	< 1 x 10 ³	< 1 x 10 ³	fulfilled

The measuring devices used for the qualification tests are calibrated at regular intervals; their results can be traced back to national and international standards. In cases where no national standards exist, the test procedure implemented complies with the technical regulations and norms applicable at the time of the test. The relevant documentation can be viewed on request at any time.

Detailed information and parameters of the test environment can be found in the Fraunhofer IPA test report.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA	KU 1805-1035 Report No. first document	Stuttgart, December 13, 2018 Place, date of first document issued
Business unit Testing and Certification	KU 2507-1650 Report No. current document	Stuttgart, November 10, 2025 Place, current date
Nobelstrasse 12 70569 Stuttgart Germany	on behalf of Dr.-Ing. Frank Bürger, head of business unit Testing and Certification	