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DEVICE

KUKA Robotics Guangdong Co., Ltd.
robot series KR SCARA_KR 12
Report No. KU 2204-1316

Statement of
Qualification

Product series
Electrostatic Behavior

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Statement of Qualification · Product series

Customer

KUKA Robotics Guangdong Co., Ltd.
No.3, Liaoxin Road, Shuikou Residential Committee, Beijiao Town,
Shunde District, Foshan City
528311, Guangdong Province
China

Component tested

Category: Automation Components

Subcategory: Robotics

Product name: robot series KR SCARA_KR 12
(manufacturing date: 2/2022; batch number: 8630236; max. payload: 12 kg)
tested products:
- KR SCARA_KR 12 R850 Z340 CR
  (serial number: 10037906; weight: 56 kg; max. reach: 850 mm)
- KR SCARA_KR 12 R650 Z340 CR
  (serial number: 10037902; weight: 54 kg; max. reach: 650 mm)
- KR SCARA_KR 12 R650 Z400
  (serial number: 10037896; weight: 52 kg; max. reach: 650 mm)
- KR SCARA_KR 12 R850 Z400
  (serial number: 10037900; weight: 54 kg; max. reach: 850 mm)

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

Standards/Guidelines: DIN EN 61340-2-3, -5-1
The norms stated generally refer to the version valid at the time of the tests.

Measuring equipment:
- Data acquisition: ..... Tera-Ohm-Meter TO-3
  ..... H.-P. Fischer Elektronik GmbH & Co. KG (Mittenwalde)
- Measuring probe:
  – Typ: ..... Model 844 Resistance 2-Point Probe (Micro probe)
  – Manufacturer: ..... Electro-Tech Systems Inc. (Glenside, USA

Test environment parameters:
- Cleanroom Air Cleanliness Class (according to ISO 14644-1): ..... ISO 1
- Airflow velocity: ..... 0.45 m/s
- Airflow pattern: ..... vertical laminar flow
- Temperature: ..... 22 °C ± 0.5 °C
- Relative humidity: ..... 45 % ± 5 %

Test parameters:
- Insulating base:
  – Model: ..... 4x 2 insulation cylinders with centering collar
  ..... total insulation resistance > 10^{13} Ω
  – Material: ..... polytetrafluorethylene
- Contact point: ..... metallic flange for mountable tools
- Groundable point: ..... on the robot base

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Test result / Classification

The robot series KR SCARA_KR 12 was examined for its electrostatic behavior at representative points in accordance with DIN EN 61340-2-3.
The resistance to groundable point (R_{gp}) values obtained from the test pieces lies within the limits of the limiting value of 1 x 10^9 Ω required by DIN EN 61340-5-1 for ESD control elements.

Measuring point	Operating voltage [V]	Max. value [Ω]	Compliance with limit value as per DIN EN 61340-5-1
Resistance to groundable point (R_{gp})	10	< 1.0 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

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KU 2204-1316 — Report No. first document
Stuttgart, June 24, 2022 — Place, date of first document issued

-- — Report No. current document
-- — Place, current date

on behalf of
Dr.-Ing. Frank Bürger, Project Manager Fraunhofer IPA

This document only applies to the named product in its original state and is valid for a period of 5 years from the date the first document was issued. The document can be verified under **www.tested-device.com**.