



Fraunhofer

**TESTED[®]
DEVICE**

FANUC Europe Corporation S.A.

M-20iB\25C

Report No. FA 1705-911

DUPLICATE

Statement of
Qualification

Electrostatic
Resistance

Statement of Qualification

Customer
 FANUC Europe Corporation S.A.
 rue Benedikt Zender 7
 6469 Echternach
 Luxembourg

Component tested

Category: Automation Components
 Subcategory: Robotics
 Product name: M-20iB\25C in white paint/25kg standard cleanroom (A05B-1226-B221) (manufacturing date: 9/2/2017; serial number: E-95294)

Test result / Classification

The robot M-20iB\25C in white paint/25kg standard cleanroom (A05B-1226-B221) was examined for its resistance to earth in accordance with DIN EN 61340-2-3. The test result lies below the required maximum value of $1 \times 10^9 \Omega$ according to DIN EN 61340-5-1 for ESD protective elements.

	Operating voltage [V]	Resistance [Ω]	Compliance with limit value as per DIN EN 61340-5-1
Resistance to earth	10	$< 2 \times 10^5$	fulfilled

Electrostatic discharge measurements at representative points (resistance to earth)

Standards/Guidelines: DIN EN 61340-4-1; DIN EN 61340-2-3
 The norms stated generally refer to the version valid at the time of the tests.

Test devices: Data capture: Tera-Ohm Meter Model 6206,
 Eltex (Weil am Rhein)

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 \pm 0.5 °C
- Relative humidity: 45 % \pm 5 %

Test procedure parameters:

- Assembly state:insulating base
 - Type:.....4x insulating feet – fully-insulated hexagonal feet with $R > 10^{12} \Omega$
 - Material:.....glass-filled polyester
 - Thickness:..... 35 mm
- Contact point: metallic flange for mounting tools
- Earthing point:.....at base of robot

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.

For further information about the test environment and parameters, please refer to the Fraunhofer IPA test report.

Fraunhofer Institute for Manufacturing Engineering and Automation IPA

FA 1705-911
 Report No. first document

Stuttgart, October 18, 2017
 Place, date of first document issued

Department of Ultraclean Technology and Micromanufacturing

--
 Report No. current document

--
 Place, current date

Nobelstrasse 12
 70569 Stuttgart
 Germany

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