

Test report

Number: T211-0100/19
Project file: C20190373
Date: 2019-02-12
Pages: 6

Product: Installation contactor

Type reference: IKD25-40, IKD25-22, IKD25-04

Ratings: /

Trademark: Iskra

Applicant: Iskra d.d.
Stegne 21, SI-1000 Ljubljana, Slovenia

Manufacturer: Iskra d.d.
Stegne 21, SI-1000 Ljubljana, Slovenia

Place of manufacture: Iskra d.d.
Stegne 21, SI-1000 Ljubljana, Slovenia

Summary of testing

Testing method: EN 60068-2-27:2009, EN 60068-2-64:2008
Parameters specified by the applicant

Testing location: SIQ Ljubljana, Mašera-Spasičeva ulica 10, SI-1000 Ljubljana, Slovenia

Remarks: Date of receipt of test items: 2019-02-04
Number of items tested: 3
Date of performance of tests: 2019-02-06 to 2019-02-12
The test results presented in this report relate only to the items tested.
The product complies with the requirements of the testing methods.

Tested by: Mirko Coko



Approved by: Miha Otrin



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1 TEST EQUIPMENT

- Vibration system DERRITRON-VP 700 /TW36000/DVC1600, ID 395 (2019-12-19).
- Piezoelectric accelerometer ENDEVCO, model 213E, ser No. NJ22, ID 772 (2019-08-30).
- Charge amplifier B&K, Type 2626, ID 398 (2019-03-13).
- Short time measuring device ser.No.SIQ06019.

Note: The date of the recommended recalibration is given for each measuring instrument (in brackets).

2. EQUIPMENT UNDER TEST (EUT)

Three Installation contactors IKD25-40, IKD25-22, IKD25-04 (Figure 1) were subjected to vibration and shock test according to standard EN 61373:2010.

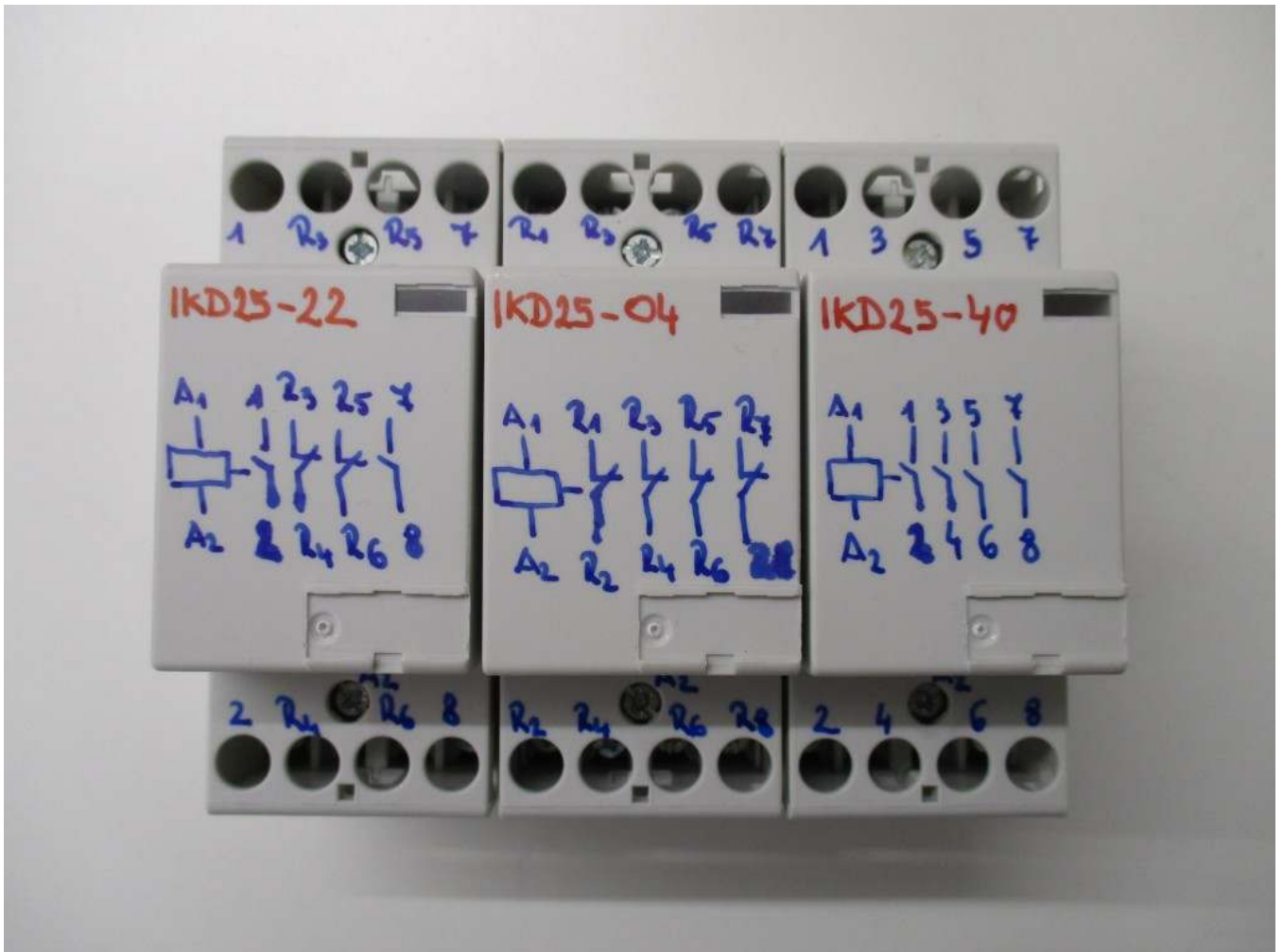


Figure 1

3 MECHANICAL TEST

The test procedures were conducted in following sequence:

- Vibration test-random long life, see Section 3.1.
- Shock test, see Section 3.2.
- Vibration test-random functional, see Section 3.3.

3.1 Vibration test random long life (EN 60068-2-64:2008)

Procedure according to standard EN 61373:2010, Category 1-Class B-Body mounted:

- Environmental temperature 22 °C.
- State of EUT: Non-operating.
- Orientation: X, Y, Z-axis.
- Because the installed position is unknown the EUT was subjected to vertical test levels.
- Total frequency range: 5 ÷ 150 Hz.
- Frequency range: 10 ÷ 20 Hz, Accel. Spectral. Density: $0.964 (m/s^2)^2/Hz$.
- Frequency range: 20 ÷ 150 Hz, -6 dB/octave.
- RMS value of acceleration: $5.72 m/s^2$.
- Duration of the test: 5 hours per axis.

The samples were mounted on fastening device prepared by SIQ. Figures 2 to 4 are presenting fixing of the EUT onto the electro-dynamic shaker.

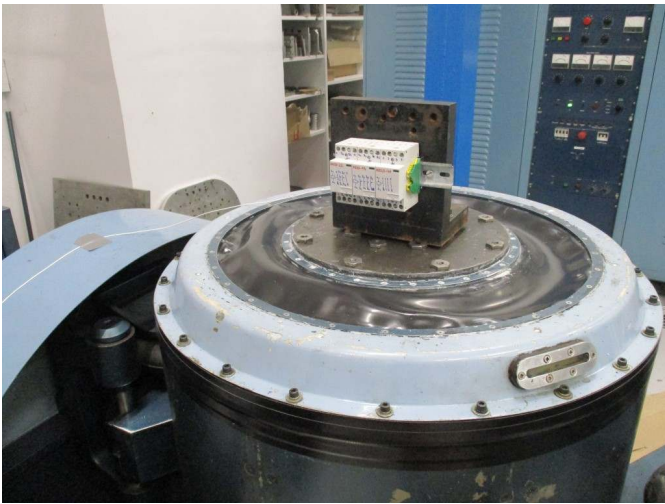


Figure 2: Vertical axis

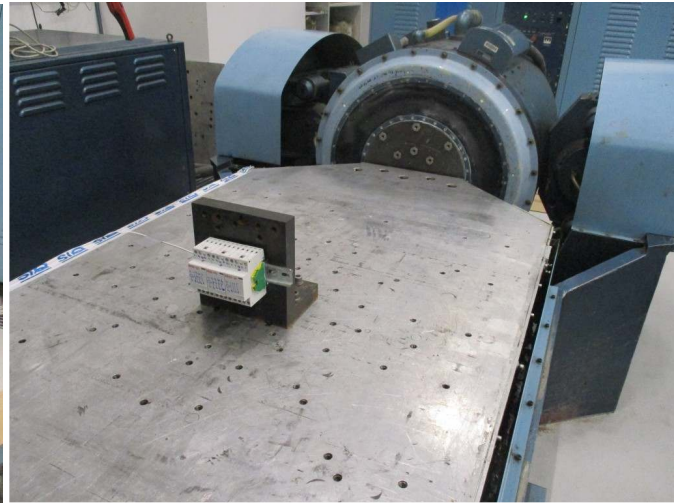
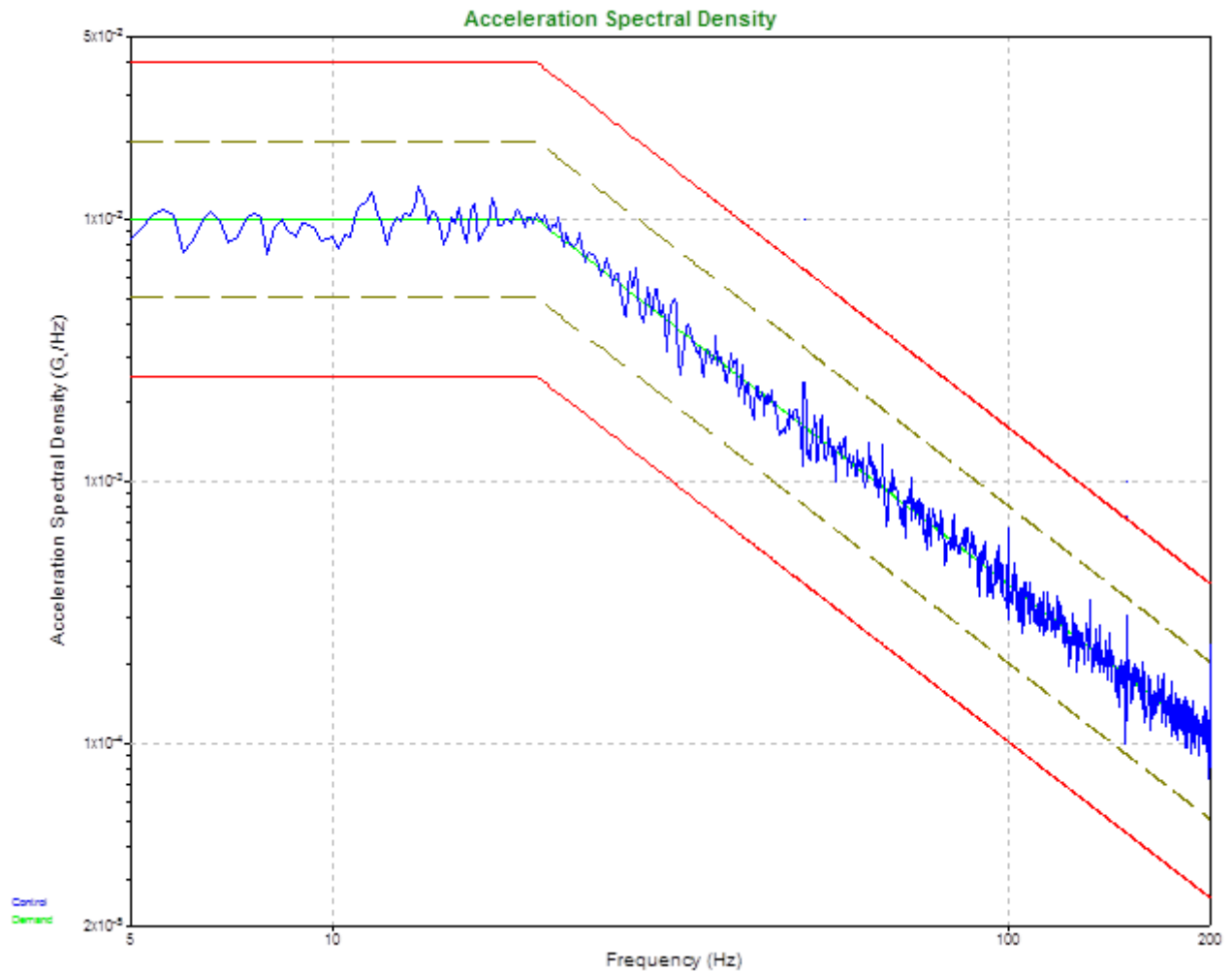


Figure 3: Transversal-axis



Figure 4: Longitudinal-axis

The random vibration profile is presented in Figure 5.



Conclusion: The state of the EUT was monitored during and after each stage of the test. After the mechanical testing there were no deterioration or damage of the samples observed (visual examination), no cracks were visible.

3.2 Shock test (EN 60068-2-27:2009)

Procedure according to standard EN 61373:2010, Category 1-Class B-Body mounted:

- Environmental temperature 22 °C.
- State of EUT: Non-operating.
- Pulse shape-half sine.
- Acceleration: 30 m/s².
- Duration of the pulse: 30 ms.
- Number of shocks 18: 3 shocks in two directions of the three axis x, y and z.

The shock parameters in positive and negative direction are shown in Figures 6 and 7.

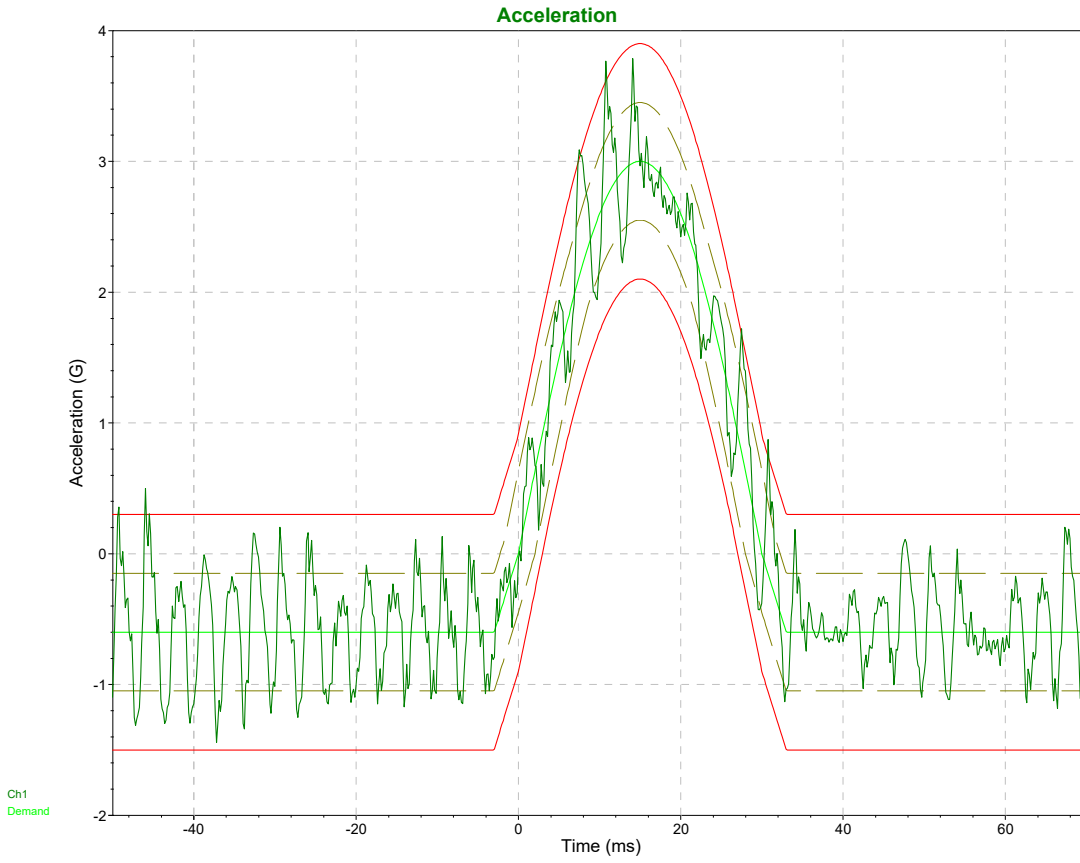


Figure 6: Positive direction

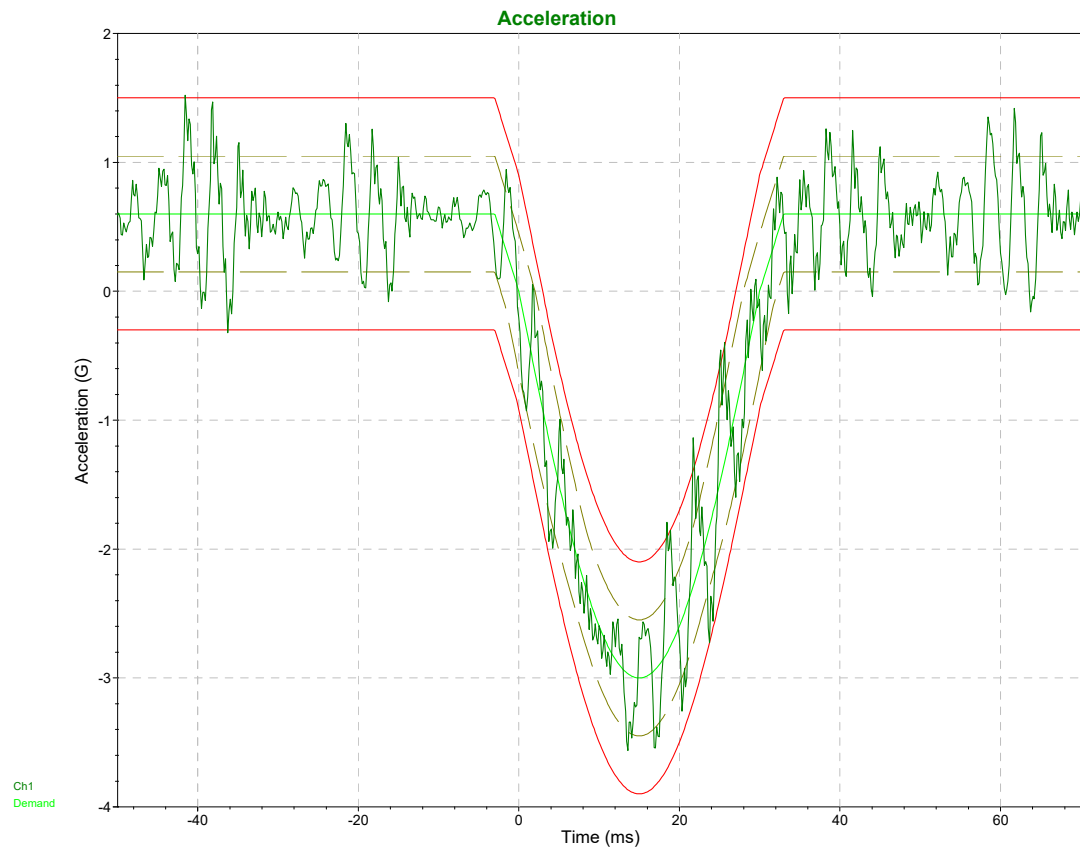


Figure 7: Negative direction

3.3 Vibration test random functional (EN 60068-2-64:2008)

Procedure according to standard EN 61373:2010, Category 1-Class B-Body mounted:

- Environmental temperature 22 °C.
- State of EUT: Operating.
- Orientation: X, Y, Z-axis.
- Because the installed position is unknown the EUT was subjected to vertical test levels.
- Total frequency range: 5 ÷ 150 Hz.
- Frequency range: 10 ÷ 20 Hz, Accel. Spectral. Density: $0.964 (m/s^2)^2/Hz$.
- Frequency range: 20 ÷ 150 Hz, -6 dB/octave.
- RMS value of acceleration: $5.72 m/s^2$.
- Duration of the test: 15 minutes per axis.

The samples were mounted on fastening device prepared by SIQ. Figures 8 to 11 are presenting fixing of the EUT onto the electro-dynamic shaker. During the test the samples were connected to rated power supply 220 V d.c. The output contacts were connected to short time measuring device to detect interruptions between contacts in duration $>10 \mu\text{sek}$.

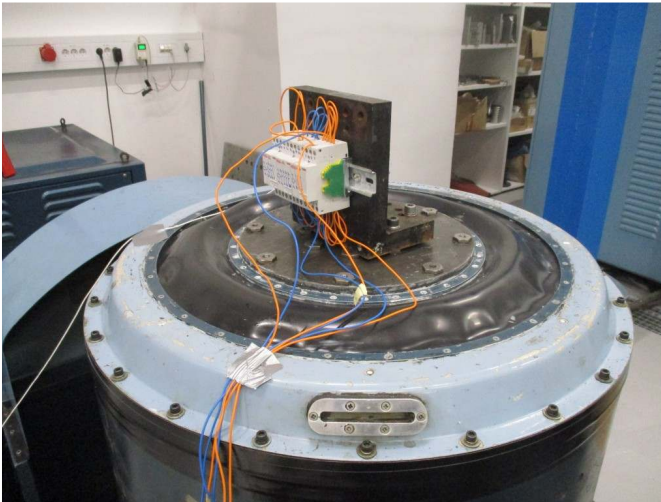


Figure 8: Vertical axis

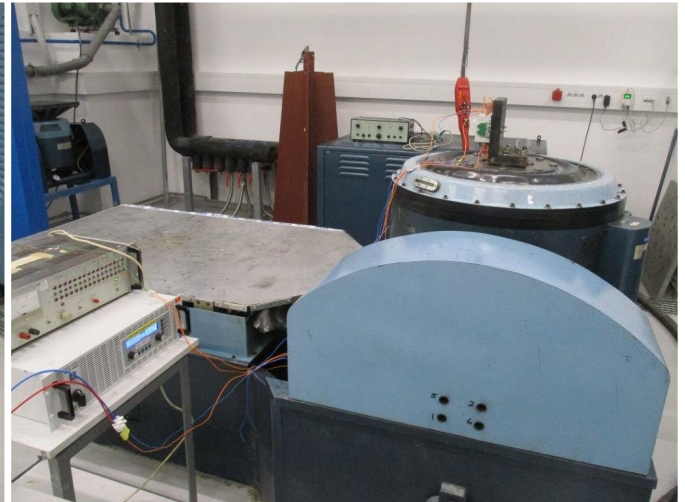


Figure 9: Vertical axis

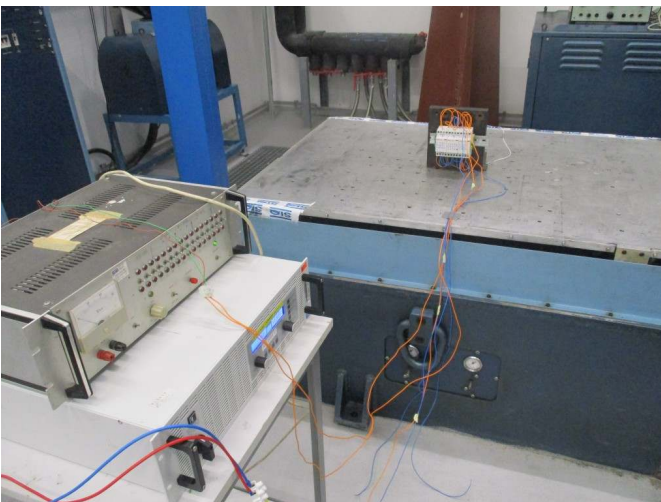


Figure 10: Longitudinal axis

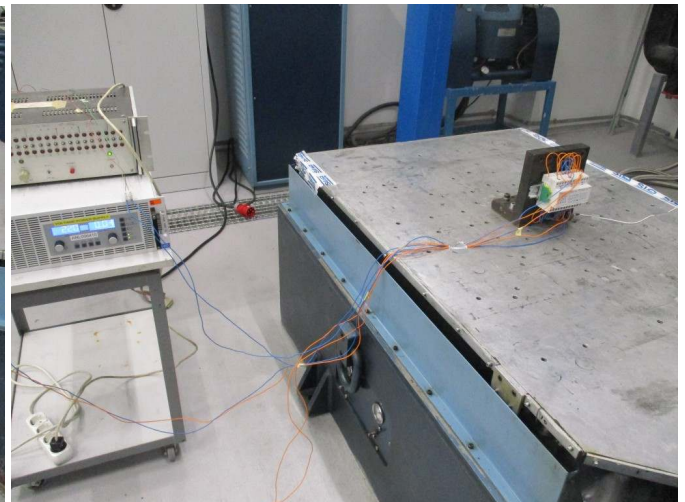


Figure 11: Transversal axis

Conclusion: After the test there was no deterioration or damage on the sample noticed, no cracks were visible. During the test there were no interruptions between relay contacts.

4 RESULTS AND CONCLUSIONS: GENERAL

The EUT sustained the specified mechanical testing.