

Title

List of High-Power Testing Laboratories for: Switchgear, Switchboards, Electric Panels and other substations equipment (focus on Europe and North America)

Temperature Rise Tests, Short time current and crest withstand tests, Short Circuit, Breaking and Making, Internal Arc and others.

Author

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IEC
Reference
Standards

- **IEC 61439-1/2** - Low-voltage switchgear and controlgear assemblies
- **IEC 62271-200** and others in the series (High voltage switchgear and controlgear - Part 200: AC metal-enclosed switchgear and controlgear for rated voltages above 1 kV and up to and including 52 kV.
- **IEC TR 62271-307**: High-voltage switchgear and controlgear - Part 307: Guidance for the extension of validity of type tests of AC metal-enclosed switchgear & controlgear for rated voltages > 1 kV & < 52 kV

PROJECTS THAT I HELPED TO DO: <https://www.cognitor.com.br/HelpedToDo.pdf>

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Revisions	Date	Pages	Description
0	August 12, 2024	-	First Version

Dear High Power Testing Laboratory Team,

Brazil was the seventh largest economy in the world between 2010 and 2014. In 2022, it fell to 11th. It is expected to return to 8th place very soon. If the economy grows, the electric power industry grows and needs to do more testing.

Several of my Brazilian switchgear clients have been asking me for, the names of testing laboratories abroad to carry out high-power tests like internal arc tests on medium voltage panels, interruption tests on distribution expulsion fuse & switches. This also include short circuit and temperature rise tests on low voltage panels. This report include a table with testing labs abroad, particularly interesting for Brazilian manufacturing power equipment.

My name is Sergio Feitoza Costa. I am a well-known world-wide consultant for the design of low-voltage (LV) and medium / high-voltage (MV) switchgear, switchboards and other products for substations. CV below.

In Brazil, after having excellent laboratory capabilities we are now with few options and, in some cases, no options, at least up to the middle of 2025. I explain the scenario in the article at the end of this report.

Ou main focus in the tables below is about tests from low voltage power equipment to some 36Kv equipment. Just to exemplify, a typical test needed by my clients is in the internal arc in 17,5 to 24kV at some 16 to 25kArms.

As many of my clients are needing to do tests right now, I am doing this post to collect more data from testing labs. The format is (only) one page per testing laboratory.

The preference of my clients is for labs in Spain, Portugal and Italy. However other options English speaking are also welcome. If you are receiving this message is because I know the possibilities of your testing lab or even know it.

If you want to have your lab capabilities included in this table, please complete it in a simplified way and send to my e-mail below. Please do not include more tests or details than below. **The intention is to be simple to read and to understand** (and not complete as the many pages in sites). We need information sent in the format of this one-page table.


Yours Sincerely

Sergio Feitoza Costa *** If you want to know more details about me, please check this link and C.V.

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LIST OF TESTS AND EQUIPMENT TO BE TESTED (only one page per lab)

Attention: Please do not include more tests or more details than below. The intention is to be simple to read and to understand (and not complete as your site). We will be able to include only information sent in the format of this table

	Medium voltage equipment (MV / HV)	Low-voltage equipment (LV)
Laboratory name and Site	TECNALAB https://www.tecnalia.com/en/locations	
Locations		
Description	more than 300 types of electrical tests (power, high voltage, LV, MV, power electronics and environmental),	
Types of tests in general	Low-voltage switchgear and controlgear like Electrical panels, enclosures etc... Low-voltage fuses, insulators and bushing. Distribution transformers, voltage and current measuring transformers. Cables and accessories, condensers, lightning conductors...and more	
Temperature rise tests		Up to 30 kA ef or 21 MVA
Short time currents and crest currents		Up to 300 kArms or 150 MVA
Internal arc tests	36 kV – 25 kA – 3Φ 24 kV – 31,5 kA – 3Φ 15 kV – 40 KA – 3Φ -	
Short circuit making and breaking tests	36 kV – 25 kA – 3Φ 24 kV – 31,5 kA – 3Φ 15 kV – 40 KA – 3Φ -	1000 V – 100 kA Low voltage apparatuses up to 150 MVA
Mainly active load switching	-36 kV – 1,25 kA – 3Φ 24 kV – 1,6 kA – 3Φ 15 kV – 2,0 KA – 3Φ	
Interruption of inductive and capacitive loads	Any switchgear up to a test voltage 100 KV 1Φ or 69 KV 3Φ	
External Power Arc tests and others	<ul style="list-style-type: none"> Up to class 400 kV – 1s or 500 kV for 0,2 s duration at 50 kA Lightening arrester pressure relief up to 63 kA rms – 1s 	
Short circuit tests on Power Transformers and Reactors	Up to 750 MVA in the transformer or 1500 MVA testing power	
Dielectric tests and others like Ingress Protection IP, mechanical operation, EMC, ...		

Article about the lack of testing laboratories in Brazil. <https://www.cognitor.com.br/hplENG.pdf>