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Certificate of Participation

SIEMENS AG

PEHLA - Testing Laboratory Frankfurt am Main, Carl-Benz-Strasse 22, Frankfurt am Main 60386, DE

The laboratory above has been assessed and found to comply with the applicable requirements of ISO/IEC 17025 In accordance with UL's Data Acceptance Program (DAP) and has been qualified as a DAP participant. The laboratory is hereby authorized to submit testing data to UL for product certification purposes as allowed by the schemes and for the product types and standards identified in the DAP Scope.

Client Test Data Program (CTDP)

DA File: DA2443

Issued: 1/31/2025

Expires: 2/3/2026

A handwritten signature in black ink that reads 'Paul Mouawad'.

Paul Mouawad
Program Owner

Data Acceptance Program (DAP) Assessment Report

Project Number: 4791578263 / Assessment conducted on January 22, 2025 / File Number: DA2443

Standard Number:	Standard Title:	Standard Edition (Amendment):	Clause:	Test method:
ATTACHMENT A - Post Audit Scope (115 Tests Total)				
CSA-C22.2 No. 31	Switchgear Assemblies	11	8.5.1	HIGH VOLTAGE SWITCHGEAR ASSEMBLIES - DIELECTRIC STRENGTH
CSA-C22.2 No. 31	Switchgear Assemblies	11	8.5.2	HIGH VOLTAGE SWITCHGEAR ASSEMBLIES - IMPULSE TEST
CSA-C22.2 No. 31	Switchgear Assemblies	11	8.5.3	HIGH VOLTAGE SWITCHGEAR ASSEMBLIES - CORONA EXTINCTION TEST
CSA-C22.2 No. 58	High-Voltage Isolating Switches	2	6.2	TEMPERATURE RISE
CSA-C22.2 No. 58	High-Voltage Isolating Switches	2	6.3	DIELECTRIC STRENGTH
CSA-C22.2 No. 58	High-Voltage Isolating Switches	2	6.4	IMPULSE AND CORONA EXTINCTION
CSA-C22.2 No. 58	High-Voltage Isolating Switches	2	6.5	MECHANICAL ENDURANCE
CSA-C22.2 No. 193	High Voltage Full-Load Interrupter Switches	1986	5.2	IMPULSE WITHSTAND
CSA-C22.2 No. 193	High Voltage Full-Load Interrupter Switches	1986	5.3	DIELECTRIC STRENGTH
CSA-C22.2 No. 193	High Voltage Full-Load Interrupter Switches	1986	5.4	TEMPERATURE RISE
CSA-C22.2 No. 193	High Voltage Full-Load Interrupter Switches	1986	5.7	MECHANICAL ENDURANCE
IEC 60529	Degrees of Protection Provided by Enclosures (IP Code)	2.2	12	TESTS FOR PROTECTION AGAINST ACCESS TO HAZARDOUS PARTS
IEC 60529	Degrees of Protection Provided by Enclosures (IP Code)	2.2	14.2.3	TEST FOR SECOND CHARACTERISTIC NUMERAL 3 WITH OSCILLATING TUBE OR SPRAY NOZZLE
IEC 60529	Degrees of Protection Provided by Enclosures (IP Code)	2.2	14.2.4	WATER SPRAY TEST FOR ENCLOSURE DESIGNATION IPX4
IEC 62262	Degrees of Protection Provided by Enclosures for Electrical Equipment Against External Mechanical Impacts (IK Code)	1	5	GENERAL REQUIREMENTS FOR TESTS
IEC 62262	Degrees of Protection Provided by Enclosures for Electrical Equipment Against External Mechanical Impacts (IK Code)	1	6	TEST FOR PROTECTION AGAINST MECHANICAL IMPACTS
IEC 62262	Degrees of Protection Provided by Enclosures for Electrical Equipment Against External Mechanical Impacts (IK Code)	1	7	TEST APPARATUS
IEC 62271-1	High-Voltage Switchgear and Controlgear - Part 1: Common Specifications	2017	7.2	DIELECTRIC
IEC 62271-1	High-Voltage Switchgear and Controlgear - Part 1: Common Specifications	2017	7.4	RESISTANCE MEASUREMENT
IEC 62271-1	High-Voltage Switchgear and Controlgear - Part 1: Common Specifications	2017	7.5	CONTINUOUS CURRENT
IEC 62271-1	High-Voltage Switchgear and Controlgear - Part 1: Common Specifications	2017	7.6	SHORT-TIME WITHSTAND CURRENT AND PEAK WITHSTAND CURRENT
IEC 62271-1	High-Voltage Switchgear and Controlgear - Part 1: Common Specifications	2017	7.8	TIGHTNESS
IEC 62271-100	High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers	2021	7.2	Dielectric tests

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IEC 62271-100	High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers	2021	7.4	Resistance measurement
IEC 62271-100	High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers	2021	7.5	Continuous current tests
IEC 62271-100	High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers	2021	7.6	Short-time withstand current and peak withstand current tests
IEC 62271-100	High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers	2021	7.7	Verification of the protection
IEC 62271-100	High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers	2021	7.8	Tightness tests
IEC 62271-100	High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers	2021	7.10	Additional tests on auxiliary and control circuits
IEC 62271-100	High-voltage switchgear and controlgear – Part 100: Alternating-current circuit-breakers	2021	7.101	Mechanical and environmental tests
IEC 62271-102	High-Voltage Switchgear and Controlgear - Part 102: Alternating Current Disconnectors and Earthing Switches	2018	7.2	DIELECTRIC
IEC 62271-102	High-Voltage Switchgear and Controlgear - Part 102: Alternating Current Disconnectors and Earthing Switches	2018	7.4	RESISTANCE MEASUREMENT
IEC 62271-102	High-Voltage Switchgear and Controlgear - Part 102: Alternating Current Disconnectors and Earthing Switches	2018	7.5	CONTINUOUS CURRENT
IEC 62271-102	High-Voltage Switchgear and Controlgear - Part 102: Alternating Current Disconnectors and Earthing Switches	2018	7.6	SHORT-TIME WITHSTAND CURRENT AND PEAK WITHSTAND CURRENT
IEC 62271-102	High-Voltage Switchgear and Controlgear - Part 102: Alternating Current Disconnectors and Earthing Switches	2018	7.8	TIGHTNESS
IEC 62271-102	High-Voltage Switchgear and Controlgear - Part 102: Alternating Current Disconnectors and Earthing Switches	2018	7.102	OPERATING AND MECHANICAL ENDURANCE
IEC 62271-103	High-voltage switchgear and controlgear – Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV	2021	7.2	Dielectric tests
IEC 62271-103	High-voltage switchgear and controlgear – Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV	2021	7.4	Resistance measurement
IEC 62271-103	High-voltage switchgear and controlgear – Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV	2021	7.5	Continuous current tests
IEC 62271-103	High-voltage switchgear and controlgear – Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV	2021	7.6	Short-time withstand current and peak withstand current tests

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IEC 62271-103	High-voltage switchgear and controlgear – Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV	2021	7.7	Verification of the protection
IEC 62271-103	High-voltage switchgear and controlgear – Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV	2021	7.8	Tightness tests
IEC 62271-103	High-voltage switchgear and controlgear – Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV	2021	7.10	Additional tests on auxiliary and control circuits
IEC 62271-103	High-voltage switchgear and controlgear – Part 103: Alternating current switches for rated voltages above 1 kV up to and including 52 kV	2021	7.102	Mechanical and environmental tests
IEEE C37.09	Standard Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V	2018	4.4	CONTINUOUS CURRENT-CARRYING
IEEE C37.09	Standard Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V	2018	4.5.4	POWER FREQUENCY WITHSTAND VOLTAGE
IEEE C37.09	Standard Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V	2018	4.5.4.1	DRY TESTS PROCEDURE
IEEE C37.09	Standard Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V	2018	4.5.5	FULL-WAVE LIGHTNING IMPULSE WITHSTAND VOLTAGE
IEEE C37.09	Standard Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V	2018	4.13	MECHANICAL ENDURANCE
IEEE C37.09	Standard Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V	2018	4.15	CONTROL VOLTAGE
IEEE C37.09	Standard Test Procedures for AC High-Voltage Circuit Breakers with Rated Maximum Voltage Above 1000 V	2018	4.18	SEALED PRESSURE SYSTEMS TIGHTNESS TESTS
IEEE C37.20.3	Metal-Enclosed Interrupter Switchgear (1 kV-38 kV)	2013	6.12	MECHANICAL ENDURANCE TESTS
IEEE C37.20.3	Metal-Enclosed Interrupter Switchgear (1 kV-38 kV)	2013	6.14.1	TEST FOR BUS-BAR INSULATION
IEEE C37.20.3	Metal-Enclosed Interrupter Switchgear (1 kV-38 kV)	2013	6.2.5.1	GENERAL CASE
IEEE C37.20.3	Metal-Enclosed Interrupter Switchgear (1 kV-38 kV)	2013	6.2.6.1	POWER FREQUENCY VOLTAGE TESTS
IEEE C37.20.3	Metal-Enclosed Interrupter Switchgear (1 kV-38 kV)	2013	6.2.6.2	LIGHTNING IMPULSE VOLTAGE TESTS
IEEE C37.20.3	Metal-Enclosed Interrupter Switchgear (1 kV-38 kV)	2013	6.2.9	PARTIAL DISCHARGE TESTS - OPTIONAL
IEEE C37.20.3	Metal-Enclosed Interrupter Switchgear (1 kV-38 kV)	2013	6.4	MEASUREMENT OF RESISTANCE OF CIRCUITS
IEEE C37.20.3	Metal-Enclosed Interrupter Switchgear (1 kV-38 kV)	2013	6.5	TEMPERATURE RISE TEST
IEEE C37.20.3	Metal-Enclosed Interrupter Switchgear (1 kV-38 kV)	2013	6.6	SHORT-TIME WITHSTAND CURRENT AND PEAK WITHSTAND CURRENT TESTS
IEEE C37.20.4	Indoor AC Switches (1 kV - 38 kV) for Use in Metal-Enclosed Switchgear	2013	6.12	MECHANICAL OPERATIONS TESTS
IEEE C37.20.4	Indoor AC Switches (1 kV - 38 kV) for Use in Metal-Enclosed Switchgear	2013	6.2.6.1	POWER FREQUENCY VOLTAGE TESTS
IEEE C37.20.4	Indoor AC Switches (1 kV - 38 kV) for Use in Metal-Enclosed Switchgear	2013	6.2.6.2	LIGHTNING IMPULSE VOLTAGE TESTS

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IEEE C37.20.4	Indoor AC Switches (1 kV - 38 kV) for Use in Metal-Enclosed Switchgear	2013	6.4	MEASUREMENT OF THE RESISTANCE OF CIRCUITS
IEEE C37.20.4	Indoor AC Switches (1 kV - 38 kV) for Use in Metal-Enclosed Switchgear	2013	6.5	CONTINUOUS CURRENT
IEEE C37.20.4	Indoor AC Switches (1 kV - 38 kV) for Use in Metal-Enclosed Switchgear	2013	6.6	SHORT-TIME WITHSTAND CURRENT
IEEE C37.20.4	Indoor AC Switches (1 kV - 38 kV) for Use in Metal-Enclosed Switchgear	2013	6.6	PEAK WITHSTAND CURRENT (FORMERLY MOMENTARY) TEST
IEEE C37.20.4	Indoor AC Switches (1 kV - 38 kV) for Use in Metal-Enclosed Switchgear	2013	6.8	TIGHTNESS
IEEE C37.20.7	IEEE Guide for Testing Switchgear Rated Up to 52 kV for Internal Arcing Faults	2017	5	Tests
IEEE C37.20.7	IEEE Guide for Testing Switchgear Rated Up to 52 kV for Internal Arcing Faults	2017	6	Assessment
IEEE C37.20.9	Metal-Enclosed Switchgear Rated 1 kV to 52 kV Incorporating Gas Insulating Systems	2019	7.2	DIELECTRIC
IEEE C37.20.9	Metal-Enclosed Switchgear Rated 1 kV to 52 kV Incorporating Gas Insulating Systems	2019	7.4	MEASUREMENT OF RESISTANCE OF CIRCUITS
IEEE C37.20.9	Metal-Enclosed Switchgear Rated 1 kV to 52 kV Incorporating Gas Insulating Systems	2019	7.5	CONTINUOUS CURRENT (TEMPERATURE-RISE)
IEEE C37.20.9	Metal-Enclosed Switchgear Rated 1 kV to 52 kV Incorporating Gas Insulating Systems	2019	7.6	SHORT-TIME WITHSTAND CURRENT AND PEAK WITHSTAND CURRENT
IEEE C37.20.9	Metal-Enclosed Switchgear Rated 1 kV to 52 kV Incorporating Gas Insulating Systems	2019	7.8	TIGHTNESS
IEEE C37.20.9	Metal-Enclosed Switchgear Rated 1 kV to 52 kV Incorporating Gas Insulating Systems	2019	7.12	MECHANICAL
IEEE C37.100.1	Common Requirements for High Voltage Power Switchgear Rated Above 1000 V	2018	7.3.7.2	POWER FREQUENCY VOLTAGE
IEEE C37.100.1	Common Requirements for High Voltage Power Switchgear Rated Above 1000 V	2018	7.3.7.3	LIGHTNING IMPULSE VOLTAGE TESTS
IEEE C37.100.1	Common Requirements for High Voltage Power Switchgear Rated Above 1000 V	2018	7.3.10	PARTIAL DISCHARGE TESTS
IEEE C37.100.1	Common Requirements for High Voltage Power Switchgear Rated Above 1000 V	2018	7.3.12	VOLTAGE TEST AS CONDITION CHECK
IEEE C37.100.1	Common Requirements for High Voltage Power Switchgear Rated Above 1000 V	2018	7.5	MEASUREMENT OF THE RESISTANCE OF CIRCUITS
IEEE C37.100.1	Common Requirements for High Voltage Power Switchgear Rated Above 1000 V	2018	7.6	TEMPERATURE-RISE
IEEE C37.100.1	Common Requirements for High Voltage Power Switchgear Rated Above 1000 V	2018	7.7	SHORT-TIME WITHSTAND CURRENT AND PEAK WITHSTAND CURRENT
IEEE C37.100.1	Common Requirements for High Voltage Power Switchgear Rated Above 1000 V	2018	7.8	VERIFICATION OF THE PROTECTION
IEEE C37.100.1	Common Requirements for High Voltage Power Switchgear Rated Above 1000 V	2018	7.9	TIGHTNESS

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NEMA C37.55	Medium-Voltage Metal-Clad Switchgear Assemblies — Conformance Test Procedures	2020	5.4	Dielectric tests
NEMA C37.55	Medium-Voltage Metal-Clad Switchgear Assemblies — Conformance Test Procedures	2020	5.5	Continuous current tests
NEMA C37.55	Medium-Voltage Metal-Clad Switchgear Assemblies — Conformance Test Procedures	2020	5.6	Momentary withstand current tests
NEMA C37.55	Medium-Voltage Metal-Clad Switchgear Assemblies — Conformance Test Procedures	2020	5.7	Short-time withstand tests
NEMA C37.55	Medium-Voltage Metal-Clad Switchgear Assemblies — Conformance Test Procedures	2020	5.8	Mechanical performance tests
NEMA C37.57	Metal-Enclosed Interrupter Switchgear Assemblies - Conformance Testing	2003	4.5.2	POWER-FREQUENCY WITHSTAND VOLTAGE TESTS
NEMA C37.57	Metal-Enclosed Interrupter Switchgear Assemblies - Conformance Testing	2003	4.5.3	LIGHTNING-IMPULSE WITHSTAND TEST
NEMA C37.57	Metal-Enclosed Interrupter Switchgear Assemblies - Conformance Testing	2003	4.6	MECHANICAL PERFORMANCE TESTS
NEMA C37.57	Metal-Enclosed Interrupter Switchgear Assemblies - Conformance Testing	2003	4.7	CONTINUOUS CURRENT TEST
NEMA C37.57	Metal-Enclosed Interrupter Switchgear Assemblies - Conformance Testing	2003	4.8	SHORT-TIME WITHSTAND CURRENT TEST
NEMA C37.57	Metal-Enclosed Interrupter Switchgear Assemblies - Conformance Testing	2003	4.9	MOMENTARY WITHSTAND CURRENT TEST
NEMA C37.58	Switchgear—Indoor AC Medium-Voltage Switches for Use in Metal-Enclosed Switchgear— Conformance Test Procedures	2020	4.5	Dielectric Test
NEMA C37.58	Switchgear—Indoor AC Medium-Voltage Switches for Use in Metal-Enclosed Switchgear— Conformance Test Procedure	2020	4.6	Power Frequency Voltage Test
NEMA C37.58	Switchgear—Indoor AC Medium-Voltage Switches for Use in Metal-Enclosed Switchgear— Conformance Test Procedure	2020	4.7	Lightning Impulse Withstand Test
NEMA C37.58	Switchgear—Indoor AC Medium-Voltage Switches for Use in Metal-Enclosed Switchgear— Conformance Test Procedure	2020	4.8	Temperature-Rise Test
NEMA C37.58	Switchgear—Indoor AC Medium-Voltage Switches for Use in Metal-Enclosed Switchgear— Conformance Test Procedure	2020	4.9	Short-Time Withstand Current and Peak Withstand Current (Formerly Momentary) Tests
NEMA C37.58	Switchgear—Indoor AC Medium-Voltage Switches for Use in Metal-Enclosed Switchgear— Conformance Test Procedure	2020	4.10	Mechanical Endurance Test
IEEE C37.20.2	Metal-Clad Switchgear	2022	6.2.1	DESIGN - DIELECTRIC TESTS
IEEE C37.20.2	Metal-Clad Switchgear	2022	6.2.1.1	DIELECTRIC TESTS - POWER FREQUENCY WITHSTAND TESTS
IEEE C37.20.2	Metal-Clad Switchgear	2022	6.2.1.2	DIELECTRIC TESTS - LIGHTNING IMPULSE WITHSTAND TESTS
IEEE C37.20.2	Metal-Clad Switchgear	2022	6.2.1.3	DIELECTRIC TESTS - TEST FOR BUS-BAR INSULATION
IEEE C37.20.2	Metal-Clad Switchgear	2022	6.2.2	DESIGN - RATED CONTINUOUS CURRENT TESTS

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IEEE C37.20.2	Metal-Clad Switchgear	2022	6.2.3	MOMENTARY WITHSTAND CURRENT
IEEE C37.20.2	Metal-Clad Switchgear	2022	6.2.4	SHORT-TIME WITHSTAND CURRENT
IEEE C37.20.2	Metal-Clad Switchgear	2022	6.2.6	MECHANICAL ENDURANCE TESTS
NEMA C37.54 (2023)	Indoor Alternating Current High-Voltage Circuit Breakers Applied as Removable Elements in Metal-Enclosed Switchgear - Conformance Test Procedures	2023	3.5.2	LIGHTNING IMPULSE WITHSTAND VOLTAGE TESTS
NEMA C37.54 (2023)	Indoor Alternating Current High-Voltage Circuit Breakers Applied as Removable Elements in Metal-Enclosed Switchgear - Conformance Test Procedures	2023	3.6	CONTINUOUS CURRENT CARRYING TESTS
NEMA C37.54 (2023)	Indoor Alternating Current High-Voltage Circuit Breakers Applied as Removable Elements in Metal-Enclosed Switchgear - Conformance Test Procedures	2023	3.7	MECHANICAL ENDURANCE TESTS
NEMA C37.54 (2023)	Indoor Alternating Current High-Voltage Circuit Breakers Applied as Removable Elements in Metal-Enclosed Switchgear - Conformance Test Procedures	2023	3.9	SHORT TIME CURRENT CARRYING TESTS
NEMA C37.54 (2023)	Indoor Alternating Current High-Voltage Circuit Breakers Applied as Removable Elements in Metal-Enclosed Switchgear - Conformance Test Procedures	2023	3.5.1	POWER FREQUENCY WITHSTAND VOLTAGE TESTS