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Certificate of Participation

SIEMENS AG

Testing Laboratory Medium Voltage, Frankfurt am Main, Carl-Benz-Strasse 22, 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: DA1390

Issued: 01/31/2025

Expires: 02/03/2026

A handwritten signature in black ink, appearing to read 'Paul Mouawad'.

Paul Mouawad
Program Owner

Data Acceptance Program (DAP) Assessment Report

Project Number: 4791577321 / Assessment conducted on January 22, 2025 / File Number: DA1390

| 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 | Temparture-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 - LIGHTENING 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 |