

Modular LV Switchboard and MCC System AS/NZS 61439-2, IEC/EN 61439-2 Compliance



Signature SE



TABLE D1 Verification	TESTED BY
<p>1 Strength of Material and Parts Refer table (page 2) for tests conducted in accordance with AS/NZS 61439-1</p>	<p>AUSGRID Testing & Certification Australia NATA Report</p>
<p>2 Degree of Protection The Signature system has been subjected to tests complying with the requirements of AS 1939 (IEC 60529) to IP31, IP33, IP43 and IP55.</p>	<p>Testing & Certification Australia ASTA Certified NATA Report Australian Electrical Testing Centre University SA</p>
<p>3 Clearances Clearances have been verified in accordance with Annex F for: 1000V (Ui) 8kV (Uimp) Pollution Degree 3 Creepage measurement exceeded allowable for Table 14 Case B</p>	<p>Testing & Certification Australia ASTA Certified</p>
<p>4 Creepage Distances Clearances and creepage distances have been verified in accordance with Annex F for: 1000V (Ui) 8kV (Uimp) Pollution Degree 3 Creepage measurement exceeded allowable for Material Groups I, II, IIIa and IIIb</p>	<p>Testing & Certification Australia ASTA Certified</p>
<p>5 Effectiveness of Protective Circuit The connection of exposed conductive parts of the assembly to the protective circuit have been verified by resistance measurement. Short Circuit Withstand Strength The rated short time withstand strength (I_{cs}) was tested to 40kA rms for 0.14s 84kA peak The rated conditional short time withstand strength (I_{cc}) was tested to 30kA at 240V</p>	<p>Testing & Certification Australia ASTA Certified</p>
<p>9 Dielectric Properties The Signature system withstood without puncture or flashover: a) power frequency tests in accordance with Clause 8.2.2 up to 3500Vac rms applied for 1 minute b) impulse voltage withstand ≤8kV (U_{imp}) (complete assembly) and 16kV (U_{imp}) on the busbar system.</p>	<p>Testing & Certification Australia ASTA Certified</p>
<p>10 Temperature Rise Limits Tests in accordance with Clause 8.2.1 to verify limits as listed in Table 2 carried out on complete switchboards up to 3200A. Tests including an incoming ACBs and outgoing MCCB and CFS feeders <800A, MCCB and Fuse protected DOL starters ≤185kW.</p>	<p>Testing & Certification Australia ASTA Certified</p>
<p>11 Short Circuit Withstand Strength BUSBAR systems have been verified for rated short circuit withstand (I_{cs}) of: a) ≤65kA rms for 3s 143kA peak (I_{pk}) Phase-Phase b) ≤80kA rms for 1s 176kA peak (I_{pk}) Phase-Phase c) ≤50kA rms for 3s 105kA peak (I_{pk}) Neutral d) ≤40kA rms for 1s 84kA peak (I_{pk}) Neutral SWITCHGEAR incoming and outgoing units have been subjected to conditional short circuit withstand (I_{cc}) ≤80kA at operating voltages ≤690Vac rms 50Hz. a) Incoming unit ACB b) Outgoing units MCCBs and CFS feeders and DOL starters.</p>	<p>Testing & Certification Australia ASTA Certified</p>
<p>12 EMC Tests generally applicable to electrical / electronic components installed in assemblies for test. Not applicable to verification tests conducted to date. Where applicable Clause 10.12 allows verification by assessment.</p>	<p>Not Applicable</p>
<p>13 Mechanical Operation On the Signature SE demountable system, mechanical operation tests applicable to door locks and hinges only. Such tests not currently laboratory tested although the design is well proven empirically with over 20 years of satisfactory service.</p>	<p>To be undertaken</p>

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TABLE D1 Verification	TESTED BY
1 Strength of Material and Parts Clause 10.2.3.2 Resistance to abnormal heat and fire due to electric effects. Verification of resistance of insulating materials to abnormal heat and fire (glow wire tests) performed on busbar supports.	AUSGRID Testing & Certification Australia NATA Report
11 Short Circuit Withstand Strength BUSBAR dropper systems have been verified for rated short circuit withstand (lcs) of: a) $\leq 80\text{kA}$ for 1s 176kA peak (l _{pk}) Phase - Phase Switchgear outgoing units have been subjected to conditional short circuit withstand (lcc) 80kA rms at 415V rms 50Hz a) MCCB Feeder Units $\leq 800\text{A}$ b) DOL Starter Units $\leq 110\text{kW}$	Testing & Certification Australia ASTA Certified

Standard tests conducted in accordance with **AS/NZS 3439.1 Annex ZD** and remain fully with **AS/NZS 61439-1 Appendix ZD**

INTERNAL ARC FAULT TESTS	TESTED BY
DOL Starters $\leq 132\text{kW}$	Standard Tests at 50kA 415V
DOL Starters $\leq 75\text{kW}$	Standard Tests at 65kA 415V
DOL Starters $\leq 30\text{kW}$	Standard Tests at 65kA 690V
CFS Feeder $\leq 800\text{A}$	Standard Tests at 50kA 690V
MCCB Feeder $\leq 400\text{A}$	Standard Tests at 50kA 690V
ACB Feeder 1000V	Standard Tests at 50kA 690V

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Type tests conducted in accordance with **AS/NZS 61439-1 Appendix ZD**

TYPE TESTS	TESTED BY
DOL Starters $\leq 110\text{kW}$	Standard Tests at 80kA 415V
MCCB Feeder $\leq 800\text{A}$	Standard Tests at 80kA 415V

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