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Toughest ever Fuji SMBE Macquarie outdoor switchboard passes rigorous testing



Fuji SMBE Macquarie's tough new outdoor switchboard at the testing facility in NSW

Leading Australian-manufactured switchboard producer, Fuji SMBE Macquarie, is introducing its toughest ever outdoor switchboard, which has just passed a series of rigorous tests to ensure safety, performance and longevity.

The new AS/NZS 61439 fully type-tested outdoor main switchboard complements Fuji SMBE Macquarie's extensive range of Australian-manufactured low-voltage switchboards.

"We wanted to provide the local market with an outdoor switchboard tested to all aspects of the standard, so we put it through the most onerous testing to

prove its reliability, even in the harshest of environments,” said Mr Peter Silsby, Director, Fuji SMBE Macquarie, which is a wholly owned subsidiary of Fuji Electric.

Fuji SMBE Macquarie’s switchboards are fully backed by local service, and provide advantages for applications including industrial, commercial, hospitality, data, health, infrastructure, rail, mining, retail and financial institutions.

The company just moved to new purpose-built premises in Prestons NSW to meet growing demand for Australian-manufactured low-voltage switchboards, particularly with Covid causing businesses to re-evaluate their supply chain and source more local products.

Outdoor Switchboard Testing

Comprehensive testing is crucial to maintaining Standards compliance, and providing users with assurance of product quality and longevity, says Mr Silsby. Tests conducted on the new switchboard included:

Corrosion testing to Severity B, as mentioned in the standard. This involved a month of intense corrosion testing designed to simulate years of service in the harshest of environments, including coastal areas common in Australia, which has more than 80% of the population living within 50 kilometres of the coast.

IP66 water and dust testing to provide peace of mind that the enclosure will be watertight and sealed from any dust contamination. The dust test is particularly demanding, as the switchboard is placed in a test cell, a vacuum is placed inside, and the lab attempts to suck dust inside the enclosure.

Temperature rise is always onerous on a fully enclosed switchboard. The results achieved were exceptional due to the uniquely designed internal air flow.

Short circuit testing to prove that the design can handle any application with 100kA for 1 second on the main busbars.

Arc fault containment testing to stringently test the structure of the switchboard. Fuji SMBE Macquarie achieved Appendix ZD arc fault containment on the outgoing units. The same switchboard was then converted for indoor applications and passed the special arc fault containment test on the line side of the outgoing units.

"An outdoor switchboard with special arc fault containment is rare, but we wanted to set a new benchmark for safety, reliability and performance in Australia," said Mr Silsby.

"To further enhance ease-of-use, we also designed a unique Form 4b terminal enclosure for easy connection of outgoing cables," he said.

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