

## PROJECT FACT SHEET

**Customer:** Nilsen

**Project:** Further Type Testing for our Nilsen N-Series Modular LV Switchboards

**Project Profile:** **Brief Description of This Project**

Nilsen Switchboard Division recently undertook further type testing of its Modular N-Series LV Switchboards thereby increasing the range of our switchboard capabilities that have been fully type tested.

Because some of the required testing was destructive in nature, Nilsen Switchboards had to manufacture a board specifically for testing purposes. The test board was a representative copy of three specific tiers from a board being manufactured for a major project. The first two tiers contained a 2800 / 3200A Air Circuit Breaker, and a 1600A Isolator Switch whilst the third tier had 7 Feeder Circuits of various ratings (20A to 630A) located in different sized modules.

The board was designed and produced in our Adelaide manufacturing facility. Type Testing was carried out by TÜV Rheinland in Melbourne. The testing was carried out to AS/NZS standards. In anticipation of the pending adoption of European (IEC) Standards in Australia, the Temperature Rise Tests were also carried out to IEC 61439 1. Ed. 2.0

This initiative has added a further 7 Type Test Certificates to our already impressive library.

**Outline of Nilsen Scope of Works**

- Verification of temperature rise limits by type test to AS/NZS 3439.1 2002 sub clause B and to IEC 61439 . Ed. 2.0 clause 10.10, for tiers 1,2 & 3
- Standard internal arcing fault test @ 50kA RMS at 415V initiated within cable compartment to annexure ZD.3 Standard test @ 400VAC to AS/NZS 3439.1 2002 for cells in tier three
- Verification of short circuit withstand strength by type test to AS/NZS 3439.1 2002 sub clause 8.2.3 @ 50kA RMS for 1 Second at 415V

**Specific Project Obstacles to overcome**

- Owing to extremely limited footprint availability and the amount of equipment the client wanted in the boards we had to populate this board with more equipment than we would normally design into a similar sized board.

**Nilsen Innovations**

- Proving of limited Arc Fault containment, and Thermal Testing of our new half size (95mm high) modules. This gives additional flexibility to our range of design capabilities and theoretically providing double the amount of module space for small feeders and starters within a standard tier.
- Nilsen APS Busbar support system was further proven
- Nilsen dual bus - single Fish Plate jointing method was proven
- Successful Type Testing of insulated flexible copper busbars within starter and feeder modules
- Successful Type Testing of insulated flexible copper braid within starter and feeder modules