

Product Type Approval Certificate

Restricted

This certificate is issued to:

Supplier name and address:	Optimised Network Equipment Pty Ltd. 41/2 Benson Street, Toowong, QLD 4066
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In respect of:

Manufacturer:	Main capacitor bank – Nokian Capacitors Ltd. (GE Grid company) Auxiliary capacitor bank - Nokian Capacitors Ltd. (GE Grid company) Reactor – Nokian Capacitors Ltd. (GE Grid company) Damping resistor – Microelettrica Scientifica M.S. Resistances
Place of manufacture:	Main capacitor bank, auxiliary capacitor bank, reactor - Kaapelikatu 3, 33330 Tampere, Finland Damping resistor - Zone Industrielle Du Coin, Rue De Cret de la Perdrix, 42400 St. Chamond, France
Product description:	11 kV, 500 kVAr, C-type, harmonic filter for use in traction applications to reduce the level of AC harmonics generated to acceptable limits. The harmonic filter is manufactured in accordance with the Sydney Trains, Kangy Angy Substation harmonic filter specification ER1046, Revision 1.1
Use approved for:	Use on the heavy rail 11 kV network.
Conditions of approval:	For use at Kangy Angy Traction Substation. The harmonic filter protection requirements are in accordance with the approved protection concept design. Reference drawings (Kangy Angy Traction Substation) EL 0737508 3D Isometric View (Rev B) EL 0737509 Arrangement & Parts List (Rev B) EL 0737510 Single Line Diagram (Rev B)

	<p>EL 037511 Base Drawing (Rev B)</p> <p>EL 037512 Grounding Details (Rev B)</p> <p>EL 0737513 Bank Specification Plate (Rev B)</p>
Limitations:	<p>Future procurement of this 11kV harmonic filter would require engineering assurance for compliance with the Sydney Trains harmonic filter specification specific to the location and consultation with the Director Energy Network & Systems, AMB.</p>

Evaluating rail transport operator

Name:	Nick Giannoulis
Position:	A/Director Energy Networks & Systems, Asset Management Branch, Transport for NSW
Signature:	<i>N Giannoulis</i>
Date:	15 th December, 2022

Product approval pack reference number (objective): qT7821475