

Product Type Approval Certificate

Restricted

This certificate is issued to:

Supplier name and address:	Schneider Electric Australia Pty. Ltd 78 Waterloo Road, Macquarie Park, New South Wales 2113
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In respect of:

Manufacturer:	Schneider Electric
Country of manufacture:	Germany
Product description:	Switchgear model: GHA 33kV Gas Insulated Switchgear (GIS), single busbar, rated short time withstand current 31.5kA for 3 seconds, complete with: • vacuum interrupters • 1250 A busbar • 1250 A bus-tie circuit breaker • 800 A circuit breakers (feeder, rectifier, system transformer, harmonic filter) • AFLR internal arc classification (31.5 kA for 1 second) • Rated operating sequence: O - 3min - CO - 3min - CO • SCADA controlled switchgear • 33kV voltage transformers (busbar & system transformer) • separate protection and control panels (PCP) required. Manufactured to TfNSW standard <i>TS 03761:1.0 33kV AC Indoor Switchgear</i>
Use approved for:	Use on the Sydney Trains 33kV AC network.
Conditions of approval:	This is a restricted type approval, see the limitations section of this certificate. The protection requirements for a specific substation shall be in accordance with the approved protection concept.

	A typical set of drawings (Wolli Creek Junction Traction Substation) are as follows. These drawings represent the control circuitry and HV protection scheme implementation which is standardised for the Sydney Trains network. • EL0794480 SCHNEIDER 33KV GHA SWITCHGEAR, GENERAL ARRANGEMENT, SHEET 1 OF 2 • EL0794481 SCHNEIDER 33KV GHA SWITCHGEAR, GENERAL ARRANGEMENT, SHEET 2 OF 2 • EL0794482 SCHNEIDER 33KV GHA SWITCHGEAR, SYMBOLS LEGEND • EL0794483 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 1-2, PROTECTION AND CONTROL SCHEMATIC DIAGRAM • EL0794484 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 1-2, PROTECTION AND CONTROL SCHEMATIC DIAGRAM • EL0794485 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV No.1 RECTIFIER, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794486 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV No.1 RECTIFIER, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794487 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV FEEDER 705, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794488 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV FEEDER 705, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794489 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV FEEDER 7A9, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794490 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV FEEDER 7A9, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794491 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 1-3, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794492 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 1-3, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794493 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 2-3, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2
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	• EL0794494 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 2-3, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794495 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV FEEDER 702, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794496 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV FEEDER 702, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794497 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV FEEDER 767, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794498 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV FEEDER 767, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794499 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV No.2 RECTIFIER, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794500 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV No.2 RECTIFIER, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794501 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 2-1, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794502 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 2-1, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794503 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 3-1, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794504 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 3-1, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794505 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV FEEDER 765, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794506 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV FEEDER 765, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794507 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV 33/11kV, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794508 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV 33/11kV, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2
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	• EL0794509 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV No.3 RECTIFIER, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794510 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV No.3 RECTIFIER, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794511 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 3-2, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 2 OF 2 • EL0794512 SCHNEIDER 33KV GHA SWITCHGEAR, 33kV BUS-TIE 3-2, PROTECTION AND CONTROL SCHEMATIC DIAGRAM, SHEET 1 OF 2 • EL0794513 SCHNEIDER 33KV GHA SWITCHGEAR, RECTIFIER PLC LADDER LOGIC • EL0794514 SCHNEIDER 33KV GHA SWITCHGEAR, INTERPANEL WIRING DIAGRAM • EL0794515 SCHNEIDER 33KV GHA SWITCHGEAR, COMMUNICATIONS WIRING DIAGRAM • EL0794516 SCHNEIDER 33KV GHA SWITCHGEAR, COMPONENT LIST The separate protection and control panels are: • EL0794517 33KV PROTECTION PANEL, SECTION 1, LAYOUT DIAGRAM • EL0794521 33KV PROTECTION PANEL, SECTION 2, LAYOUT DIAGRAM • EL0794523 33KV PROTECTION PANEL, SECTION 3, LAYOUT DIAGRAM • EL0794525 PROTECTION PANEL, 240V AC, 33KV SECTION 1, SCHEMATIC DIAGRAM • EL0794527 PROTECTION PANEL, 240V AC, 33KV SECTION 2, SCHEMATIC DIAGRAM • EL0794529 PROTECTION PANEL, 240V AC, 33KV SECTION 3, SCHEMATIC DIAGRAM The type approved 33 kV cable screened separable connectors are the Raychem RSTI series and the associated RSTI screened coupling connectors where multiple cables are required on one bushing.
Limitations:	The following restrictions are in place: 1. Separate protection and control panels shall be provided for future installation of this switchgear. 2. The requirements of <i>TS 03761:1.0 33 kV AC Indoor Switchgear</i>, section 8 regarding the use of switchgear with SF₆ shall be complied with.

	3. Compliance with the above requirements and approval from the Director Energy Networks & Systems, AMB is required prior to procurement.
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Evaluating rail transport operator

Name:	Lidija Dumbaloska
Position:	Director Energy Networks & Systems, AMB, Transport for NSW
Signature:	<i>L. Dumbaloska</i>
Date:	15/08/2024

Product approval pack, objective reference number: qT697744