



TITLE	DWG No.
RMICB SUBSTATIONS WITH E TYPE LV BOARD AC SCHEMATIC WITH OPTICAL ARC FLASH DETECTION	227350Sh01
RMICB SUBSTATIONS WITH E TYPE LV BOARD TRANSFORMER DC SCHEMATIC WITH OPTICAL ARC FLASH DETECTION	227350Sh02
RMICB SUBSTATIONS WITH E TYPE LV BOARD CUSTOMER OVERCURRENT DC SCHEMATIC	227350Sh03
RMICB SUBSTATIONS WITH E TYPE LV BOARD DC SUPPLY CABLE LOOPING AND SCADA SCHEMATIC	227350Sh04
RMICB SUBSTATIONS WITH E TYPE LV BOARD WITH OPTICAL ARC FLASH DETECTION FIBRE LOOPING AND GENERAL MOUNTING DETAILS	227350Sh05
RMICB SUBSTATIONS WITH E TYPE LV BOARD TX WALL MOUNTED PROT N PANEL WITH OPTICAL AFD STYLE 1 LAYOUT AND LABEL DETAILS DIAGRAM	227351Sh01
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RMICB SUBSTATIONS WITH E TYPE LV BOARD TRANSFORMER PROTECTION PANEL STYLE 1 CABLE CONNECTION DIAGRAM	227351Sh03
RMICB SUBSTATIONS WITH E TYPE LV BOARD TX WALL MOUNTED PROT N PANEL WITH OPTICAL AFD STYLE 2 LAYOUT AND LABEL DETAILS DIAGRAM	227352Sh01
RMICB SUBSTATIONS WITH E TYPE LV BOARD TRANSFORMER PROTECTION PANEL STYLE 2 WIRING DIAGRAM	227352Sh02
RMICB SUBSTATIONS WITH E TYPE LV BOARD TRANSFORMER PROTECTION PANEL STYLE 2 CABLE CONNECTION DIAGRAM	227352Sh03
RMICB SUBSTATIONS WITH E TYPE LV BOARD CUSTOMER OVERCURRENT WALL MOUNTED PROT N PANEL LAYOUT AND LABEL DETAILS DIAGRAM	227353Sh01
RMICB SUBSTATIONS WITH E TYPE LV BOARD CUSTOMER OVERCURRENT WIRING DIAGRAM	227353Sh02
RMICB SUBSTATIONS WITH E TYPE LV BOARD OPTICAL ARC FLASH DETECTION INDICATION PANEL SCHEMATIC DRILLING AND WIRING DIAGRAM	227354Sh01
RMICB SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION CABLE CONNECTION DIAGRAM	227355Sh01
RMICB SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION CABLE SCHEDULE	227355Sh02
RMICB SUBSTATIONS WITH E TYPE LV BOARD SUBURBAN TYPE SUBSTATION WITH 1500kVA TRANSFORMERS SERVICE BOARD GEN. ARRANGEMENT AND WIRING	227356Sh01
E TYPE LV BOARD MERLIN GERIN MASTERPAC TP AIR CIRCUIT BREAKERS EXTERNAL CONNECTIONS FOR AFD DIST. SUBSTATIONS	227357Sh01
RMICB SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION SCADA PANEL WIRING AND CABLING DETAILS	227358Sh01
BATTERY TEST BOX	22212
INDOOR TRANSFORMERS MOUNTING DETAILS OF CT'S AND EARTH BAR	162655
E TYPE LV BOARD ACCEPTABLE COMBINATIONS	178227
E TYPE LV BOARD SUMMATED MDI CONNECTIONS DIAGRAM	178238

- NOTES:**
- THIS DRAWING SHOWS THE PROTECTION CABLING WHICH IS TO BE USED IN CONJUNCTION WITH RMICB CHAMBER TYPE SUBSTATIONS AND SHOULD BE READ IN CONJUNCTION WITH NETWORK STANDARDS AND THE SUBSTATION DESIGN INFORMATION PACKAGE.
  - THE CABLING AND CABLE SCHEDULE SHOWN ON THIS DRAWING IS FOR A 3 TRANSFORMER SUBSTATION. FOR SINGLE AND TWO TRANSFORMER SUBSTATIONS DELETE ANY EQUIPMENT NOT REQUIRED, CABLE CONNECTIONS AND NOTE THE FOLLOWING CHANGES TO THE CABLING.  
 SINGLE TRANSFORMER SUBSTATION  
 CABLE 1M GOES TO THE SERVICE BOARD INSTEAD OF 3M.  
 SINGLE AND TWO TRANSFORMER SUBSTATION  
 CABLE 2M GOES TO THE SERVICE BOARD INSTEAD OF 3M. FOR ALL REMAINING CABLES, NAMING FROM THE LAST INSTALLED PANEL SHALL TAKE PRECEDENCE. CABLE NAMING IS TO BE AS SHOWN, I.E. FOR A TWO TRANSFORMER SUBSTATION, THE BATTERY CABLES 4AD & 4BD THAT LOOP BETWEEN TX2 & TX3 PROTECTION PANELS ARE NOT REQUIRED. CABLES 5AD & 5BD FROM CUSTOMER SUPPLY No.1 PROTECTION PANEL WOULD BE CABLED TO TX 2 PROTECTION PANEL.
  - ONLY WHERE REQUIRED, THE EFI COULD BE MOUNTED ON EITHER SIDE OF THE HV SWITCHGEAR, IT IS SHOULD BE MOUNTED ON THE CABLE OF THE OUTING 11kV FEEDER, REFER TO THE SUBSTATION DESIGN INFORMATION PACKAGE FOR SUBSTATION SPECIFIC REQUIREMENTS.
  - THE HV DIFF CT'S ARE GENERALLY MOUNTED BELOW THE RMICB. HOWEVER THEY ARE TO BE MOUNTED ADJACENT TO THE TRANSFORMER HV CONNECTIONS IF THERE IS INADEQUATE SPACE BELOW THE RMICB. FOR UPPER LEVEL SUBSTATIONS OR SUBSTATIONS WITH A CONTROL POINT WHICH IS NOT LOCATED ADJACENT TO THE SUBSTATION, THESE CT'S ARE ALWAYS MOUNTED ADJACENT TO THE TRANSFORMER HV CONNECTIONS.
  - THE LV DIFF CT'S & CUSTOMER SUPPLY CT'S ARE LOCATED IN THEIR RESPECTIVE LV SWITCHBOARD PANEL.
  - CABLES 8A - 10A, 10S - 12S AND 1T - 3T ARE INSTALLED ONLY WHEN DRY TYPE TRANSFORMERS ARE USED.
  - FOR AN UPPER LEVEL SUBSTATION, THE RMICB'S ARE LOCATED IN A CONTROL POINT WHICH IS REMOTE FROM THE SUBSTATION, CABLES 1HV TO 3HV MUST BE RUN FROM THE TRANSFORMER PROTECTION PANEL IN THE SUBSTATION TO THE RMICB'S IN THE CONTROL POINT TO FACILITATE TRIPPING OF THE RMICB'S. IF THE CABLE RUN IS GREATER THAN 50 METRES, THE CABLES SIZE IS TO BE INCREASED TO 6mm<sup>2</sup> TO OVERCOME VOLTAGE DROP. HOWEVER, IF VOLTAGE AT THE RMICB TRIP COIL IS LESS THAN 60% OF THE NOMINAL BATTERY VOLTAGE, AUSGRID WILL ADVISE ADDITIONAL REQUIREMENTS TO BE UNDERTAKEN BY THE EQUIPPER.
  - FOR A CUSTOMER CABLE SUPPLY, THE CUSTOMER SWITCH CAN BE AN AIR CIRCUIT BREAKER OR A DISCONNECTOR. FOR A CUSTOMER BUSBAR SUPPLY, THE CUSTOMER SWITCH CAN BE AN AIR CIRCUIT BREAKER, A DISCONNECTOR OR A LINK. IN ALL OF THESE INSTALLATIONS, OVERCURRENT CT'S ARE INSTALLED IN THE CUSTOMER SUPPLY PANEL.
  - A SEPARATE PROTECTION PANEL FOR EACH CUSTOMER SUPPLY IS NORMALLY INSTALLED. THE DUAL VERSION OF THE CUSTOMER OVERCURRENT PROTECTION PANEL CAN ONLY BE USED WHEN THERE IS INSUFFICIENT WALL SPACE IN THE SUBSTATION TO ACCOMMODATE SEPARATE PANELS.
  - CABLE 11A IS TO BE SIZED TO MEET VOLTAGE DROP REQUIREMENTS OUTLINED IN AS 3000.
  - TRANSFORMER PROTECTION PANELS CONSTRUCTION ARE DEPENDANT ON THE TYPE OF TRANSFORMERS INSTALLED.  
 OIL TYPE REQUIRES STYLE 1 PROTECTION PANEL  
 DRY TYPE REQUIRES STYLE 2 PROTECTION PANEL
  - 'B' BATTERY TEST POINT BOX (BTP) ONLY REQUIRED WHERE THE 'A' BATTERY VOLTMETER/TEST POINT OR THE ARC FLASH DETECTION INDICATION PANEL HAVE BEEN MOUNTED EXTERNALLY TO THE SUBSTATION CHAMBER. 'B' BATTERY TERMINATION BOX (BTB) ADDED TO ENABLE SIMPLIFIED BATTERY REPLACEMENT. 'BTB' ENCLOSURE TO BE PVC, IP65 RATED WITH MINIMUM DIMENSIONS OF 180mm(L)x175mm(W)x75mm(D) WITH G TYPE TERMINAL RAIL AND UTILUX 3620 TERMINALS.

CAD DRAWING  
DO NOT MANUALLY AMEND  
**AMENDMENTS**  
 1. REF CT  
 2. BATTERY TEST POINT BOX  
 3. BATTERY CONNECTION  
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TO BE READ WITH  
DRAWING 227355Sh02



SCALE	AS SHOWN
DESIGNED	-
DRAWN	L.MARTINUZZI
CHECKED	W.BYRNE
APPROVED	M.BENNETT
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RMICB SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION CABLING DIAGRAM			
DRAWING No	227355	SHEET	1
AMENDMENT	1	SIZE	B1