



- NOTES:**
- THIS DRAWING SHOWS THE DC SUPPLIES, INTER-PANEL WIRING, PROTECTION COMMS FIBRE CONNECTIONS AND THE DLAC PANEL SCHEMATIC TO BE USED FOR CITY DISTRIBUTION SUBSTATIONS WITH OPTICAL ARC FLASH DETECTION AND PROTECTION FOR 1 OR 2 CUSTOMER SUPPLIES, USING FREE STANDING PROTECTION PANELS AS SHOWN IN DRAWING 227381-1. IT SHOULD BE READ IN CONJUNCTION WITH NETWORK STANDARDS AND THE SUBSTATION DESIGN INFORMATION PACKAGE.
 - THE CABLING ON THIS DRAWING AND CABLE SCHEDULE (SEE DWGS 227381-1 & 2) IS FOR A 3 TRANSFORMER SUBSTATION WITH 2 CUSTOMER SUPPLY PANELS. TRANSFORMERS MAY BE DRY TYPE OR OIL TYPE. THERMAL RELAY FAIL INDICATION IS ONLY REQUIRED FOR DRY TYPE. CUSTOMER OVERCURRENT No.2 PROTECTION IS OPTIONAL AND ONLY TO BE INSTALLED WHERE REQUIRED. BUS CABLING TO CUSTOMER DC PANELS IS BEING KEPT THE SAME REGARDLESS OF DIFFERENT ARRANGEMENTS OF EXISTING CUSTOMER DC PANELS. VENTILATION, FAN FAILURE, & WATER LEVEL TO BE INSTALLED WHERE REQUIRED (REFER TO DESIGN PACKAGE).
 - THIS DRAWING USES A DUAL VERSION OF THE CUSTOMER OVERCURRENT PROTECTION PANEL AS SHOWN ON DRAWING 227381-1. CUSTOMER OVERCURRENT PANEL IS DIVIDED, THE TOP HALF OF THE PANEL WILL BE CUSTOMER OVERCURRENT No.1 PROTECTION (PC1) AND THE BOTTOM HALF OF THE PANEL WILL BE CUSTOMER OVERCURRENT No.2 PROTECTION (PC2).
 - CABLE NAMING TO FOLLOW CABLE SCHEDULE.
 - THE DISTRIBUTION LOCAL AUTOMATION CONTROL PANEL (DLAC) INCORPORATES LOCAL SUBSTATION AUTOMATION, AUSGRID COMMUNICATIONS NETWORK EQUIPMENT, SCADA, AF INDICATION PANEL AND 18KV FEEDER BUCHHOLZ TRIP LINKS.
 - THE DLAC PANEL IS TO BE LOCATED IN THE MAIN ACCESS CHAMBER OF THE THIS SUBSTATION, 'B' BATTERY TERMINATION BOX (BTB) INSTALLED TO ENABLE SIMPLIFIED BATTERY REPLACEMENT. REFER DRAWING 227379-1.
 - TYPE 10865 TERMINALS WITH SLOTTED LINK. SEE DRAWINGS 108547-1 & 227388-1 FOR DETAILS.
 - FOR THE ELECTRONIC SOUNDER LISTED IN THE LEGEND.
 - THE VOLUME CONTROL IS TO BE SET AT MAXIMUM (DIAL FULLY TURNED CLOCKWISE).
 - THE DIP SWITCH CONFIGURATION MUST BE: DOWN, UP, DOWN, UP (READ LEFT TO RIGHT).
 - SW-1 TO SW-5 POSITION SHOWN WITH 'NON-AUTO' SELECTED.
 - THE OAP-XE MODULE IS FOR REMOTE END CONNECTION TO AUSGRID'S CSACS NETWORK. THIS MODULE IS TO BE PROVIDED WITH THE DLAC PANEL AND IS TO BE INSTALLED BY AUSGRID AT THE CSACS NODE.

LEGEND

A	30V DC 'A' BATTERY
B	48V DC 'B' BATTERY
BCA	BATTERY CHARGER 'A'
BCB	BATTERY CHARGER 'B'
BTB	BATTERY TERMINATION BOX (LOCATED NEAR 'B' BATTERY)
DLAC	DISTRIBUTION LOCAL AUTOMATION CONTROL PANEL
PC1	CUSTOMER OVERCURRENT No.1 PROTECTION PANEL
PC2	CUSTOMER OVERCURRENT No.2 PROTECTION PANEL
P1	FIRST TRANSFORMER PROTECTION PANEL
P2	SECOND TRANSFORMER PROTECTION PANEL
P3	THIRD TRANSFORMER PROTECTION PANEL
SB	48V LV SERVICE BOARD
SE1	SUBSTATION EMERGENCY PUSH BUTTON 1
SE2	SUBSTATION EMERGENCY PUSH BUTTON 2
VTP	VOLTMETER TEST POINT FOR 30V DC 'A' BATTERY

LEGEND

TAGNAME	MANUFACTURER	CATALOGUE NUMBER	DESCRIPTION	REFERENCE
BL	EUGAGUIP	MOULDED TYPE M5	BATTERY LINK	507111-1
DL-SW	MOXA	MS-G4020	ETHERNET SWITCH	-
EM-S	ASSERTA	AS/MS/9-60/R	ELECTRONIC SOUNDER, RED, 9 - 60VDC	-
FSB	ALSTOM	RS20P Black	FUSE - 2 STUD BACK CONNECTED	-
LAC	SCHWEITZER	SEL-3350	AUTOMATION CONTROLLER	26070-1
L1 TO L3	SCHNEIDER	ZB4BW33	LAMP HOLDER WITH GREEN LENS	-
	SCHNEIDER	ZB4BV6	CONTACT BLOCK (NO)	-
	MARL	215-532-48-38	GREEN BA9 LED - 60V	-
L4	SCHNEIDER	ZB4BW31	LAMP HOLDER WITH WHITE LENS	-
(IF REQUIRED)	SCHNEIDER	ZB4BV6	CONTACT BLOCK (NO)	-
	MARL	215-991-48-38	WHITE BA9 LED - 60V	-
OAP-SE	AVARA	OAP-SE-EFI-SA	OPTICAL ACCESS POINT - SUBSCRIBER END	-
(DISTRIBUTION SUB END)	AVARA	OAP-XE-V0IP	OPTICAL ACCESS POINT - COMMS NODE END	-
OAP-XE	AVARA	OAP-XE-V0IP	OPTICAL ACCESS POINT - COMMS NODE END	-
(COMMS NODE END)	AVARA	OAP-XE-V0IP	OPTICAL ACCESS POINT - COMMS NODE END	-
SW-1 TO SW-5	SCHNEIDER	HARMONY XB4	2 POSITION SELECTION SWITCH ILLUMINATED	SEE NOTE 10
TA-BP1 TA-BP2	UTILUX	3869	ISOLATING LINK RAIL MOUNTED	108547-1
X1, X3	UTILUX	3820	RAIL MOUNTED TERMINAL	108547-1
SB	WEIDMULLER	SAK 2.5	RAIL MOUNTED TERMINAL CAT No. 27966	-
XS	WEIDMULLER	ASK1	RAIL MOUNTED FUSE CAT No. 37676	-
XS	WEIDMULLER	SAKR	RAIL MOUNTED ISOLATING TERM CAT No.41226	-

TITLE

EPPOXY RESIN ENCASED PROTECTION CURRENT TRANSFORMER OUTLINE AND DETAILS	125190-1
RMCB SUBSTATIONS WITH E TYPE LV BOARD WITH OPTICAL ARC FLASH DETECTION FIBRE LOOPING AND GENERAL MOUNTING DETAILS	227350-5
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO CUSTOMER ACB INTERNAL WIRING AND ACB PANEL CONTROL WIRING SCHEMATIC	227350-2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO TRANSFORMER ACB INTERNAL WIRING AND ACB PANEL CONTROL WIRING SCHEMATIC	227350-1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, DAFO, & CUSTOMER OC No.1 PROTECTION, DISTRIBUTION AUTOMATION CONTROL PANEL WIRING & CABLING DIAGRAM	227389-2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, DAFO, & CUSTOMER OC No.1 & No.2 PROTECTION, DISTRIBUTION AUTOMATION CONTROL PANEL WIRING & CABLING	227389-1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO, DISTRIBUTION LOCAL AUTOMATION CONTROL PANEL LAYOUT AND LABEL DETAILS	227388-1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO, TRANSFORMERS AND CUSTOMER OVERCURRENT PROTECTION FREE STANDING PANELS LABEL DETAILS	227381-1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION CABLE SCHEDULE	227386-2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION CABLING DIAGRAM	227386-1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO CUSTOMER OC No.1 (8 No.2) PROTECTION PANEL WIRING AND CABLE CONNECTIONS	227385-1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, OIL TYPE TX, & DAFO, TRANSFORMER PROTECTION PANEL CABLE CONNECTION DIAGRAM	227384-2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, DRY TYPE TX, & DAFO, TRANSFORMER PROTECTION PANEL CABLE CONNECTION DIAGRAM	227384-1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, OIL TYPE TX, & DAFO, TRANSFORMER PROTECTION PANEL WIRING DIAGRAM	227383-2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, DRY TYPE TX, & DAFO, TRANSFORMER PROTECTION PANEL WIRING DIAGRAM	227383-1
CITY DISTRIBUTION SUBSTATIONS WITH OPTICAL ARC FLASH DETECTION (E TYPE LV) TRANSFORMERS AND CUSTOMER OVERCURRENT PROTECTION FREE STANDING PANELS LAYOUT DETAILS	227382-1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO, DLAC PANEL SCHEMATIC, GENERAL DC SUPPLIES INTER-PANEL WIRING, FIBRE COMMS & CABLING DIAGRAM	227380-4
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION CUSTOMER OVERCURRENT DC SCHEMATIC	227380-3
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, & OPTICAL ARC FLASH DETECTION TRANSFORMER DC SCHEMATIC	227380-2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION AC SCHEMATIC	227380-1

REFERENCE DRAWINGS

SCALE	NTS
DESIGNED	-
DRAWN	L.MARTINUZZI/E.KAIROUZ
CHECKED	C.MURPHY
APPROVED	C.MURPHY
DATE	24/06/2015
TRIM REF	-
PROJECT NUMBER	OPEX-6923-1
DRAWING No	227380
SHEET	4
AMD	12
SIZE	A0

AMENDMENTS

AMD	DATE	DESCRIPTION	DRAWN BY	DESIGNED BY	CHECKED BY	APPROVED BY
10	12/06/2024	ADDED FUSE RATINGS AS SHOWN.	L.M.	L.M.	M.B.	M.B.
11	10/09/2024	LAC WAS SEL-3350, NETWORK SWITCH WAS RS8000. GENERATOR CONNECTION & CUSTOMER AUTOCLOSING FEATURES REMOVED. LAMPS WERE RAFL. SOUNDER WAS GREY.	M.B.	M.B.	L.M.	M.B.
12	14/01/2025	OAP-XE MODULE ADDED TO LEGEND. OAP STOCK CODES ADDED. NOTE 10 ADDED, NOTE 5 AMENDED.	M.B.	M.B.	L.M.	M.B.

Ausgrid

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ISSUED FOR CONSTRUCTION

CITY DISTRIBUTION SUB WITH E TYPE LV BOARD & OPTICAL ARC FLASH DETECTION DLAC PANEL SCHEMATIC, GENERAL DC SUPPLIES INTER-PANEL WIRING, COMMS & CABLING DIAGRAM

DRAWING No 227380 SHEET 4 AMD 12 SIZE A0

C&P - DISTRIBUTION SUBS