



**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 PROTECTION FOR 1 OR 2 CUSTOMER SUPPLIES, AND CUSTOMER CO-GENERATION, USING FREE STANDING PROTECTION PANELS AS SHOWN IN DRAWING 227381 SH1 IT SHOULD BE READ IN CONJUNCTION WITH NETWORK STANDARDS AND THE SUBSTATION DESIGN INFORMATION PACKAGE.
- THE CABLING ON THIS DRAWING AND CABLE SCHEDULE (SEE DWG 227386 SH1 & SH2) IS FOR A 3 TRANSFORMER SUBSTATION WITH 2 CUSTOMER SUPPLY PANELS AND CUSTOMER CO-GENERATION. TRANSFORMERS MAY BE DRY TYPE OR OIL TYPE. THERMAL RELAY FAIL INDICATION IS ONLY REQUIRED FOR DRY TYPE. CUSTOMER NO2 AND LV AUTO-CLOSING FOR TX ACBS ARE 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 DWG 227381 SH1. 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 WITH CO-GENERATION ALGORITHM, AUSGRID COMMUNICATIONS NETWORK EQUIPMENT, SCADA, AFC PROTECTION PANEL AND 11kV FEEDER BUCHHOLZ TRIP LINKS.
- THE DLAC PANEL IS TO BE LOCATED IN THE MAIN ACCESS CHAMBER OF THE SUBSTATION. 'B' BATTERY TERMINATION BOX (BTB) INSTALLED TO ENABLE SIMPLIFIED BATTERY REPLACEMENT. REFER DRAWING 227379.
- TYPE H2869 TERMINALS WITH SLOTTED LINK. SEE DRAWINGS 18547 & 227388 FOR DETAILS.
- THE VOLUME CONTROL IS TO BE SET AT MAXIMUM (DIAL FULLY TURNED CLOCKWISE).
- FOR THE ELECTRONIC SOUNDER LISTED IN THE LEGEND.
- THE DIP SWITCH CONFIGURATION MUST BE DOWN, UP, UP, DOWN, UP (READ LEFT TO RIGHT).
- SW-1 TO SW-6 POSITION SHOWN WITH 'NON AUTO' SELECTED. SW-7 POSITION SHOWN WITH '1st TX ACB' SELECTED.

TAGNAME	MFG	CATNO	DESC	REF DWG
A			30V DC 'A' BATTERY	
B			48V DC 'B' BATTERY	
BCA			BATTERY CHARGER 'A'	
BCB			BATTERY CHARGER 'B'	
BTB			'B' 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			415V LV SERVICE BOARD	
SE1			SUBSTATION EMERGENCY PUSH BUTTON 1	
SE2			SUBSTATION EMERGENCY PUSH BUTTON 2	
VTP			VOLT METER / TEST POINT FOR 30V DC 'A' BATTERY	

TAGNAME	MFG	CATNO	DESC	REF DWG
BL	EUSGADUP	MODULATED TYPE M5	BATTERY LINK	507111
DL-SW	RUGGEXOM	RS2000	ETHERNET SWITCH	
EM-5	ASSERTA	AS/M/5/9-60/G	ELECTRONIC SOUNDER, GREY, 9 - 60VDC	
F5B	AUSTOM	RS20P Black	FUSE - 2 STD BACK CONNECTED	
LAC	SCHWEITZER	SEL-3530	AUTOMATION CONTROL RELAY	222615
L1 TO L3	RAFI	160.500.002/1502	LAMP HOLDER WITH GREEN LENS	
L4	RAFI	211.997.44-38	WHITE 60V DC EDISON SCREW MULTI-LEDS	
	RAFI	160.502.002/1002	LAMP HOLDER WITH WHITE LENS	
	MARL	211.997.44-38	WHITE 60V DC EDISON SCREW MULTI-LEDS	
DAP	AVARA	-	DAP-SE OPTICAL ACCESS POINT	
DAPS	-	-	POWER SUPPLY CARD FOR DAP	
PB-1 TO PB-2	TELEMECANIQUE	ZB4B931	FLUSH OPERATOR (METAL, WHITE) - PUSH BUTTON CONTACT BLOCK (NO)	
	TELEMECANIQUE	ZB4B961	FLUSH OPERATOR (METAL, WHITE) - PUSH BUTTON CONTACT BLOCK (NO)	
SW-1 TO SW-6	MARL	ADP-215-997-48-38-60V	FLUORESCENT REPLACEMENT WHITE LED - 60V	
SW-7	SCHNEIDER ELECT	HAM08V1 X8A	2 POSITION SELECTION SWITCH ILLUMINATED	
	KRAUS & NAIMER	CA10 TYPE, 50, A730	3 POSITION SELECTION SWITCH	
TH-BP1, TH-BP2	UTILILUX	3859	ISOLATING LINK RAIL MOUNTED	18547
X1, X3	UTILILUX	3820	RAIL MOUNTED TERMINAL	18547
SB	SAK 2 5		RAIL MOUNTED TERMINAL CAT No. 27966	
XS	WEIDMULLER	AS4T	RAIL MOUNTED FUSE CAT No. 37876	
XS	WEIDMULLER	SAKR	RAIL MOUNTED ISOLATING TERM CAT No. 41226	

TITLE	DWG No.
EPOXY RESIN ENCASED PROTECTION CURRENT TRANSFORMER OUTLINE AND DETAILS	125190
RMCB SUBSTATIONS WITH E TYPE LV BOARD WITH OPTICAL ARC FLASH DETECTION FIBRE LOOPING AND GENERAL MOUNTING DETAILS	227350 SH6
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO CUSTOMER ACB INTERNAL WIRING AND ACB PANEL CONTROL WIRING SCHEMATIC	227390 SH2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO TRANSFORMER ACB INTERNAL WIRING AND ACB PANEL CONTROL WIRING SCHEMATIC	227390 SH1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, DAFO, & CUSTOMER DC No.1 PROTECTION, DISTRIBUTION AUTOMATION CONTROL PANEL WIRING & CABLING	227389 SH2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, DAFO, & CUSTOMER DC No.1 & No.2 PROTECTION, DISTRIBUTION AUTOMATION CONTROL PANEL WIRING & CABLING	227389 SH1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO, DISTRIBUTION LOCAL AUTOMATION CONTROL PANEL LAYOUT AND LABEL DETAILS	227388 SH1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO 1500VVA TX'S AND VENTILATION FAN AC SERVICE BOARD LAYOUT, WIRING, & CONNECTIONS	227381 SH1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION CABLE SCHEDULE	227386 SH2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION CABLE SCHEDULE	227386 SH1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO CUSTOMER DC No.1 (8 No.2) PROTECTION PANEL WIRING AND CABLE CONNECTIONS	227385 SH1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, DRY TYPE TX, & DAFO, TRANSFORMER PROTECTION PANEL CABLE CONNECTION DIAGRAM	227384 SH2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, OIL TYPE TX, & DAFO, TRANSFORMER PROTECTION PANEL CABLE CONNECTION DIAGRAM	227384 SH1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, OIL TYPE TX, & DAFO, TRANSFORMER PROTECTION PANEL WIRING DIAGRAM	227385 SH2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, DRY TYPE TX, & DAFO, TRANSFORMER PROTECTION PANEL WIRING DIAGRAM	227385 SH1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND DAFO, TRANSFORMERS AND CUSTOMER OVERCURRENT PROTECTION FREE STANDING PANELS LABEL DETAILS	227382 SH1
CITY DISTRIBUTION SUBSTATIONS WITH OPTICAL ARC FLASH DETECTION (E TYPE LV) TRANSFORMERS AND CUSTOMER OVERCURRENT FREE STANDING PANELS LAYOUT DETAILS	227381 SH1
CITY DISTRIBUTION SUB WITH E TYPE LV BOARD AND DAFO, DLAC PANEL SCHEMATIC, GENERAL DC SUPPLIES INTER-PANEL WIRING, FIBRE COMMS & CABLING DIAGRAM	227380 SH4
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION CUSTOMER OVERCURRENT DC SCHEMATIC	227380 SH3
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, & OPTICAL ARC FLASH DETECTION TRANSFORMER DC SCHEMATIC	227380 SH2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION AC SCHEMATIC	227380 SH1

**REFERENCE DRAWINGS**

SCALE	DESIGNED	NTS
CHECKED	C. MURPHY	
APPROVED	C. MURPHY	
DATE	24/06/2015	
TRIM REF		
ISSUED FOR CONSTRUCTION	PROJECT NUMBER	OPEX-6923-1
	DRAWING No	227380
	SHEET	4
	AMD	7
	SIZE	A0

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

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