



- 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 DWGS 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 ACB'S ARE OPTIONAL AND ONLY TO BE INSTALLED WHERE REQUIRED. BUS CABLING TO CUSTOMER OC PANELS IS BEING KEPT THE SAME REGARDLESS OF DIFFERENT ARRANGEMENTS OF EXISTING CUSTOMER OC 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 USING FREE STANDING 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, AF INDICATION PANEL AND 11kV 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.
  - TYPE H3669 TERMINALS WITH SLOTTED LINK. SEE DRAWINGS 118547 & 227388 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, 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.

**PANEL ABBREVIATION TABLE**

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	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

**TAGNAME**

TAGNAME	MFG	CATNO	DESC	REF_DWG
BL	EUSGADUP	MODULATED TYPE M5	BATTERY LINK	50711
DL-SW	RUGGECOM	RS2000	ETHERNET SWITCH	-
EH-S	ASSERTA	AS/M/S/9-60/G	ELECTRONIC SOUNDER, GREY, 9 - 60VDC	-
FSB	ALSTOM	RS20P Black	FUSE - 2 STUD 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	211.997-4-8-38	WHITE 60V DC EDISON SCREW MULTI-LEDS	-
L4	RAFI	160.502.002/1002	LAMP HOLDER WITH WHITE LENS	-
L4	MARL	211.997-4-8-38	WHITE 60V DC EDISON SCREW MULTI-LEDS	-
DAP	AVARA	-	DAP-SE OPTICAL ACCESS POINT	-
QAPS	-	-	POWER SUPPLY CARD FOR QAP	-
PB-1 TO PB-2	TELEMECANIQUE	ZB4B31	FLUSH OPERATOR (METAL, WHITE) - PUSH BUTTON	-
SW-1 TO SW-6	ADP-215	997-48-38-60V	FLAMENT REPLACEMENT WHITE LED - 60V	-
SW-7	SCHNIDER ELECT.	HAMMOMY X8A	2 POSITION SELECTION SWITCH ILLUMINATED	-
TR-BP1, TR-BP2	KRAUS & NAIMER	CA10 TYPE, 50, A730	3 POSITION SELECTION SWITCH	-
X1, X3	UTILUX	3869	ISOLATING LINK RAIL MOUNTED	118547
X1	UTILUX	3820	RAIL MOUNTED TERMINAL	118547
X2	SAK 2.5	-	RAIL MOUNTED TERMINAL CAT No. 27966	-
X5	WEIDMULLER	AS4T	RAIL MOUNTED FUSE CAT No. 31876	-
X5	WEIDMULLER	AS4T	RAIL MOUNTED FUSE CAT No. 31876	-
XS	WEIDMULLER	SAKR	RAIL MOUNTED ISOLATING TERM CAT No. 41226	-

**TITLE**

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 OC NO1 & NO2 PROTECTION, DISTRIBUTION AUTOMATION CONTROL PANEL WIRING & CABLING DIAGRAM	227389 SH2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, DAFO, & CUSTOMER OC NO1 & NO2 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	227387 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 OC NO1 (8 NO.2) PROTECTION PANEL WIRING AND CABLE CONNECTIONS	227385 SH1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, OIL 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 AND DAFO, TRANSFORMER PROTECTION PANEL WIRING DIAGRAM	227383 SH2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD, DRY TYPE TX, & DAFO, TRANSFORMER PROTECTION PANEL WIRING DIAGRAM	227383 SH1
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD & DAFO, TRANSFORMERS AND CUSTOMER OVERCURRENT PROTECTION FREE STANDING PANELS LABEL DETAILS	227382 SH1
CITY DISTRIBUTION SUBSTATIONS WITH OPTICAL ARC FLASH DETECTION (E TYPE LVI) 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 AND OPTICAL ARC FLASH DETECTION CUSTOMER OVERCURRENT DC SCHEMATIC	227380 SH2
CITY DISTRIBUTION SUBSTATIONS WITH E TYPE LV BOARD AND OPTICAL ARC FLASH DETECTION A SCHEMATIC	227380 SH1

**REFERENCE DRAWINGS**

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

**EDS** alcedes design software

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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**

**REVISIONS**

NO.	DESCRIPTION	DATE	BY	CHKD
1	ISSUED FOR PROJECT	24/06/2015	LM	EM
2	DESIGN CHANGES	24/06/2015	LM	EM
3	DESIGN CHANGES	24/06/2015	LM	EM
4	DESIGN CHANGES	24/06/2015	LM	EM

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