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REF. DWG. NO.

REFERENCE DRAWING TITLE

A747-308-16-50-0010

OVERALL KEY SINGLE LINE DIAGRAM

A747-301-16-50-0001

S/D OF 220KV SWITCHBOARD

A747-400-16-50-50-0001

S/D FOR METERING & PROTECTION OF GEN. & GEN. TRANSFORMER

NOTES :-

1. THIS SINGLE LINE DIAGRAM IS INDICATIVE AND SHOWS THE POWER RECEIPT AND DISTRIBUTION PHYSICALLY.

2. THE MOTOR RATINGS AND CORRESPONDING CT RATIOS WHEREVER INDICATED ARE ESTIMATED. THE RATINGS SHALL BE REVISED AFTER ORDERING OF MOTORS AND WILL BE AS PER MOTOR DATASHEETS.

3. RATINGS OF TRANSFORMERS, SWITCHBOARDS ETC. ARE INDICATIVE ONLY. THE SAME SHALL BE FINALIZED LATER.

4. TABLES FOR FEEDER DETAILS OF RESPECTIVE SWITCHBOARDS ARE INDICATIVE. THE SAME SHALL BE FINALIZED LATER.

5. ALL THINGS IN DISCRETE NDMA NUMBERS FOR RELAYS ARE SHOWN BUT ALL THINGS IN HW SWBD AND PCCs SHALL BE NUMERICAL COMMUNICABLE TYPE.

6. THE MOTOR STARTER SHALL BE OF THE FOLLOWING TYPES:
a) CONTACTOR AND SWITCH PUSE WITH OVERLOAD RELAY FOR MOTORS UPTO 22KW.
b) CONTACTOR, SWITCH PUSE AND OVERLOAD RELAY WITH CBCT FOR EARTH FAULT PROTECTION FOR MOTORS ABOVE 22KW UPTO 55KW.
c) AIR CIRCUIT BREAKER, WITH NUMERICAL MOTOR PROTECTION RELAY FOR MOTORS GREATER THAN 55KW AND UPTO 100KW.

7. SPACE HEATERS SHALL BE APPLICABLE TO MOTORS RATING ABOVE AND EQUAL TO 30 KW.

8. IN 6.6KV SWITCHBOARD & 415V MCC/MCCC/EPMCC, AUTO-TRANSFER WITH MOMENTARY PARALLELING BE PROVIDED.

9. SWITCH PUSE FEEDER SHALL BE OF FOLLOWING TYPES:
a) CT, AMMETER AND KWH METER SHALL BE PROVIDED FOR SWITCH PUSE FEEDER RATED 250A & ABOVE.
b) CBCT, ELR AND CONTACTOR SHALL BE PROVIDED FOR FEEDERS RATED ABOVE 100A UPTO 400A.

10. DCS/ECS REQUIREMENT SHALL BE FINALIZED AS PER AGREED DESIGN BASIS.

11. REFER DATA SHEET FOR MV SWITCHBOARD COMPONENTS (A747-555-16-50-DS-010) FOR COMPONENT DETAILS OF TYPICAL FEEDERS.

LEGEND

(M)

MULTI FUNCTION METER

(PF)

POWER FACTOR METER

(CB)

DIS/INV CIRCUIT BREAKER

(F)

FREQUENCY METER

(ACB)

AIR CIRCUIT BREAKER

(LOUT)

LOCK OUT RELAY

(I/S)

ISOLATOR/SWITCH

(LOUTP)

LOCK OUT RELAY FOR PROCESS TRIP

(ICB)

ISOLATING CIRCUIT BREAKER

(LOUTE)

LOCK OUT RELAY FOR ELECTRICAL TRIP

(MCCB)

MOULDED CASE CIRCUIT BREAKER

(ICM)

IDMT OVER CURRENT RELAY

(C)

CONTACTOR

(IDMT E/P)

IDMT E/P RELAY

(DF)

DRAW OUT FEATURE

(INST E/P)

INSTANTANEOUS E/P RELAY

(P)

PUSE

(ST E/P)

STABILITY E/P RELAY

(PT)

POTENTIAL TRANSFORMER

(TRP)

TRANSFORMER PROBLEME RELAY

(CT)

CURRENT TRANSFORMER

(RE E/P)

RESTRICTED E/P RELAY

(CBCT)

CBCT

(TDR)

TIME DELAY RELAY

(TOLR)

TERMINAL OVERLOAD RELAY

(RCD)

RESIDUAL VOLTAGE CHECK RELAY

(CDD)

CABLE GROUND TERMINATION

(U/R)

U/R RELAY FOR MOTOR TRIPPING

(SD)

SHUNT DIODE

(U/R)

U/R RELAY

(S)

SELECTOR SWITCH

(AX)

AXIAL RELAY FOR 27M

(B)

BATTERY

(IO)

INSTANTANEOUS OVERCURRENT RELAY

(LPS)

LOCAL P.B. STATION WITHOUT AMMETER

(NR)

NEGATIVE PHASE SEQUENCE RELAY

(LPSA)

LOCAL P.B. STATION WITH AMMETER

(TOR)

TERMINAL OVERLOAD RELAY

(JA)

JUNKIE ARRESTOR

(OVR)

OVER VOLTAGE RELAY

(S)

SWITCH

(RCD)

RESIDUAL VOLTAGE RELAY

(SH)

SPACE HEATER

(CSP)

CONTROL SUPPLY SUPERVISION RELAY

(FTR)

FUSEBLOWN-TR

(FED)

FEEDER DIFFERENTIAL RELAY

(SC)

SEMICONDUCING FUSES

(TRD)

TRANSFORMER DIFFERENTIAL RELAY

(A)

AMMETER

(RUS)

RUS DIFF. TRIP RELAY

(V)

VOLTMETER

(MOR)

MOTOR DIFF. PROTECTION RELAY

(H)

KILOVAHOUR HOUR METER

(HSP)

HIGH VOLT. SUPERVISION RELAY

(RM)

ROUN HOUR METER

(CSP)

CIRCUIT SYNCHRONIZATION RELAY

(GT)

GAS TURNING GENERATOR

(TRP)

TRIP CIRCUIT SUPERVISION RELAY

(NG)

NOT FOR GENERATOR

(L)

LOSS OF EXCITATION RELAY

(PGLC)

POWER TRANSFORMER WITH GLTC

(N)

NUMERICAL RELAY

(DPT)

DEST. TRANSFORMER OCTO

(SC)

SYNCHRONOUS TIMER

(NO)

NORMALLY OPEN

(HCR)

HEALTH CHECK RELAY

(NC)

NORMALLY CLOSED

(LRT)

LOCK ROTOR THERMAL WITHSTAND RELAY

(LO)

LOCK MOTOR OPERATED

(RPS)

REVERSE POWER RELAY

(LSP)

IGNITION ASSEMBLY

(ELC)

EARTH LEAKAGE CIRCUIT BREAKER

(LW)

ISOLATOR WITH EARTH SWITCH

(AX)

AXIAL RELAY FOR 27V

(LP)

LOW POWER FACTOR

(DIR)

DIRECTIONAL OVERCURRENT RELAY

(VR)

VT RANGES

(D)

DIAGNOSTIC E/P RELAY

(BSP)

BATTERY BACKUP FAULT PROTECTION

(HWR)

HOUR HOUR METER

(VA)

V/A METER

(SGP)

SYNCHRONIZATION THROUGH SCAP GENERATOR RELAY PANEL

(GRD)

GROUNDING RELAY

(PT)

PT MONITORING RELAY

(DDB)

DEAD BUS RELAY

(4/4)

4/4 RELAY

(LBR)

LOCAL BREAKER BACKUP PROTECTION

(VRS)

VOLTAGE RESTRAINING O/C PROTECTION