

TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.

GUARANTEED TECHNICAL PARTICULARS FOR 245KV 1200A HDB ISOLATOR WITHOUT EARTH SWITCH

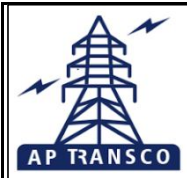
S.No	DESCRIPTION	GUARANTEED VALUE
1	Type / Installation	: "DBR" Double Break Center post rotating type" / Outdoor installation
2	Manufacturer's Name and Country of Manufacture	: PAVANI POWR SYSYEM PVT LTD. INDIA
3	Standards according to which the isolators are manufactured	: IS: 9921 - Part-I to V / IEC:62271-102
4	Miximum design voltage at which the isolator can operate (kV)	: 245
5	Frequency (Hz)	: 50
6	Rated voltage (kV)	: 220
7	Maximum current that can be safely interrupted by the isolator Inductive (A & % PF) Capacitive (A & % PF)	: Inductive- 0.7 Amps at 0.15 p.f. Capacitive- 0.7 Amps at 0.15 p.f.
8	Continuous current rating Nominal (Amps) under site conditions	: 1200
9	Rated short time current	: MAIN SWITCH
	i) For 3 seconds (kA rms)	: 40 / 50KA 3.Sec.
	ii) For 1 second (kA rms)	: Not applicable
	iii) Rated peak short time current (kVp)	: 100 / 125
10	Current density at the minimum cross-section of	: Contact sizes indicated in Annexure - III of specification & as per the property of materials.
	a) Moving blade (Amps/ Sq.mm) Cu. Tube	: 2.0 Amps / Sq.mm for HDE Cu. Tube
	b) Terminal pad : Aluminum Flat	: 1.0 Amp/ Sq.mm for EC grade Alu. Flat
	c) Contacts : Cu.Flat	: 1.6 Amps/Sq.mm for HDE Cu. Flat
	d) Terminal connector : Aluminm Casting	: 1.0 Amps/Sq.mm for Alu. Alloy.
11	Maximum Temp. Rise of current carrying parts when carrying rated current continuously (deg.C)	: Within the specified limits of IS: 9921 - PartII/ IEC-62271-102
12	Insulation Levels	:
	i) Impulse withstand voltage (kV peak) phase to earth across isolating distance:	: 1050/ 1200 kV peak
	ii) Switching surge withstand voltage (kV peak) phase to earth across isolating distance	: Not applicable
	iii) Power frequency withstand voltage (kV rms) Phase to earth isolating distance	: 460/ 530 kV rms
13	Minimum clearance in air Drawing approval subject to valid vendor registration	:
	i) Between poles (mm)	: Phase spacing of 4500 mm
	ii) Between live parts and earth (mm)	: 2100 mm (Equal to dry arcing distance of insulators selected)
	iii) Between live parts when switch is open	:
	a) On the same pole (mm)	: 3200
	b) Between adjacent poles (mm)	: 4500

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Since the supply of terminanal connectors is not in the scope of manufacturer as mentioned in the drawings. The EPC contractor shall be instructed to supply the same line with CT/PT/CVT/Isolator/IVT /LA /Breaker requirement and campability.


S.No		DESCRIPTION	GUARANTEED VALUE
15		Rated mechanical terminal load	:
i)	Load along the terminal connector side (Kg.)	:	102
ii)	Load across the terminal connector side (Kg.)	:	33.7
			CHIEF ENGINEER/PROJECTS
16 Torque required to operated the switch in Kg.m			: 40 APTRANSCO/VS/VIJAYAWADA
17		Design and Construction	:
i)	No. of insulators per pole	:	Three
ii)	No. of breaks per pole	:	Two
iii)	Type of closing / opening mechanism (Horizontal/Vertical break straight etc.)	:	Horizontal double break
iv)	Contacts	:	
a)	Material and grade	:	Hard drawn electrolytic copper flat, contact area is silver plated (15 Microns)
b)	Cross-sectional area (mm)	:	768 sq.mm for 1200 Amps
v)	Moving blades	:	
a)	Material and grade	:	Hard drawn electrolytic copper flat, contact area is silver plated (15 Microns)
b)	Cross-sectional area (mm)	:	643 sq.mm for 1200 Amps
vi)	Contact support	:	
a)	Material and size of channel/block	:	4 mm thick, MS HDG
b)	Material and size of plate	:	6 mm thick, MS HDG Plate
vii)	Rain hood - Material grade and size	:	1mm GI Sheet
viii)	Turn and twist mechanism	:	
a)	Material and size of clamps	:	50 x 10 mm thick, MS HDG flat.
b)	Maerial size of springs	:	3.0 mm Stainless steel wire
c)	Whether springs are encased	:	Not encased.
ix)	Nuts and Bolts	:	
a)	Size, material and grade in live parts	:	Less than M12: Stainless steel
b)	Size, material and grade in other parts	:	M12 and above: MS HDG.
x)	Insulator base plate material and size of plate below insulators	:	270 x 270 mm X 12mm MS HDG plate
xi)	Bearings	:	
a)	Material and size of housing	:	MS HDG suitable for 40 ID tapper roller/ ball bearing.
b)	No. of bearings, location and size	:	2 Nos . Below centre rotating post insulator.

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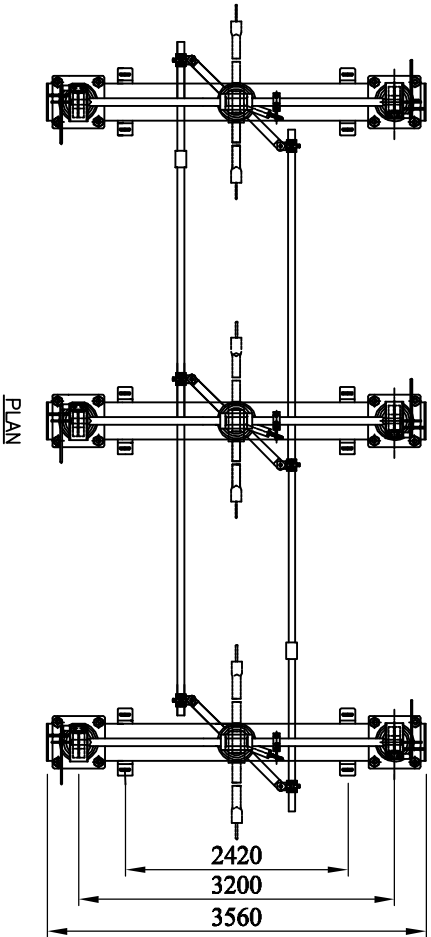
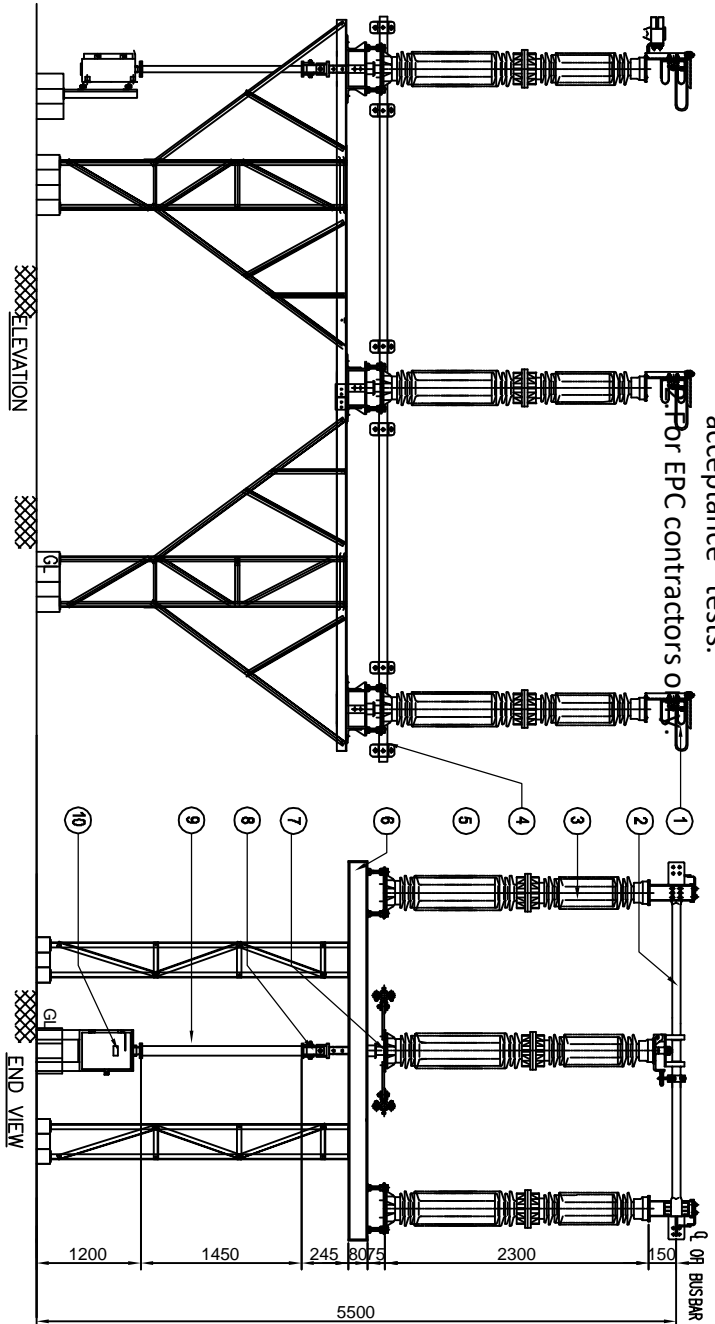


TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD.

GUARANTEED TECHNICAL PARTICULARS FOR 245KV 1200A HDB ISOLATOR WITHOUT EARTH SWITCH

S.No	DESCRIPTION	GUARANTEED VALUE
xii)	Tandem pipe	:
	a) Size, class and No. of pipes	: 32mm NB Class B,GI Pipe for Main switch-2Nos
	b) Size of shackle, screw	: Suitable for 32mm NB GI Pipe
	c) No. of bearings/bush and its material and size	: Not applicable
xiii)	Type of interlock	: Electrical interlock between isolator and correspondin breaker
xiv)	Down pipe size and class	: 50 NB Class B GI pipe
xv)	Type of universal/swivel joint	:
	a) Between bearing and down pipe	: Universal joint
	b) Between down pipe and operating mechanism	: Vernier flange
xvi)	Operating mechanism	: Motor operated mechanism for main switch
	a) Control cabinet material and thickness	: 3.mm THK Aluminum Sheet
	b) Degree of protection	: IP: 55 as per IS: 2147
	c) Type, size and No. of cable glands	: Double compression type 2Nos. 19 mm (Contractor scope of supply)
	d) Whether removable gland plate provided	: Yes, provided.
	e) Make, type, rating and quantity of motors	: HE/CGL/Remi or Eqvt. 3 Phase, 415 V, 0.5 HP
	f) Auxiliary blocks	: 12 NO + 12 NC Contacts for main switch, 10 Amps, 2 A DC Breaking with 2A - 1 No.
	g) Terminal blocks	: UBT-4
	i) Insulated wires	: 1100 V grades, 2.5 Sq.mm PVC For Auxilliary Circuit and 2.5 Sq.mm for Power cricuit.
	j) HRC Fuse / MCB	: C&S/Siemns/ABB or Eqvt.
	k) Space Heater	: 1 No. 230 V AC - 80 watts
	l) Interlocks	: with Rotary switch Kaycee or Eqvt.
xvii)	Base:	:
	a) Size of steel section used	: 145x80x5mm Rectangle box profile(M.S.HDG)
	b) Overall sie	: 145 x 80 x 3560 mm
	c) Total weight.	: 95Kgs (Approx.) one pole
18	List of drawings furnished.	: Enclosed.
<p>Name of the firm : For Pavani Power Systems Pvt. Ltd.</p> <p>Signature of Bidder : </p> <p>Designation & Seal : (T. SESHAGIRI RAO) Managing Director</p> <p>CHIEF ENGINEER/PROJECTS APTRANSCO/VS/VIJAYAWADA</p>		<p>Date : 18-05-2023</p>

NOTE: 1. Drawings Approval subject to valid type test reports, to be checked during acceptance tests.



Drawing approval subject to valid vendor registration

7622042/2023/EM MRT-ENE51

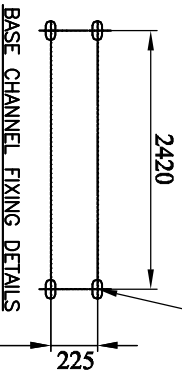
INSULATOR FIXING DETAILS

4Nos. Ø18 HOLES ON 225 P.C.D.



4Nos. Ø16 TAP HOLES ON 127 P.C.D.

PLAN



18 X 36 SLOT HOLES

PART LIST:

1. FIXED CONTACT ASSEMBLY
2. MOVING CONTACT ASSEMBLY
3. INSULATOR STACK (COSTUMER SCOPE)
4. TANDEM PIPE FOR ISOLATOR (32NB, CLASS "B" G.I PIPE)
5. ELEVATOR PLATE (270X270X12MM THK M.S HDG)
6. BASE CHANNEL (145 X 80 X 5MM THK. M.S HDG)
7. ROTATING STOOL BASE WITH LEVER ARM & CLAMP (M.S HDG)
8. OPERATING PIPE CONNECTING BUSH (M.S HDG)
9. DOWN PIPE FOR ISOLATOR (50NB CLASS" B" G.I PIPE)
10. MOTOR OPERATING MECHANISM FOR ISOLATOR

REFERENCE DRAWINGS:

1. FOR ISOLATOR CONTACT ASSEMBLY (1200 AMPs)
2. FOR MOTOR OPERATING MECHANISM BOX
3. FOR SCHEMATIC DIAGRAM
4. FOR TERMINAL BLOCK DETAILS
5. FOR NAME PLATE DETAILS

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. THE INDICATED DIMENSIONS ARE SUBJECT TO THE MANUFACTURING TOLERANCE:
 UP TO 50mm ----- ±3%; 51 TO 100mm ----- ±2%
 101 TO 300mm ----- ± 1%; ABOVE 300mm ----- ±0.5%
 3. SHORT TIME CURRENT RATING 40kA/50kA msa. FOR 3 Sec.
 4. MIN. CREEPAGE DISTANCE 3625 mm(25mm/kV)
 5. APPLICABLE STANDARD : IEC: 62271-102
 6. ALL FERROUS PARTS ARE HOT DIP GALVANIZED (85MICRONS)

CHIEF ENGINEER/PROJECTS
APTRANSCO/VIS/VIJAYAWADA

For Pavani Power Systems Pvt. Ltd.

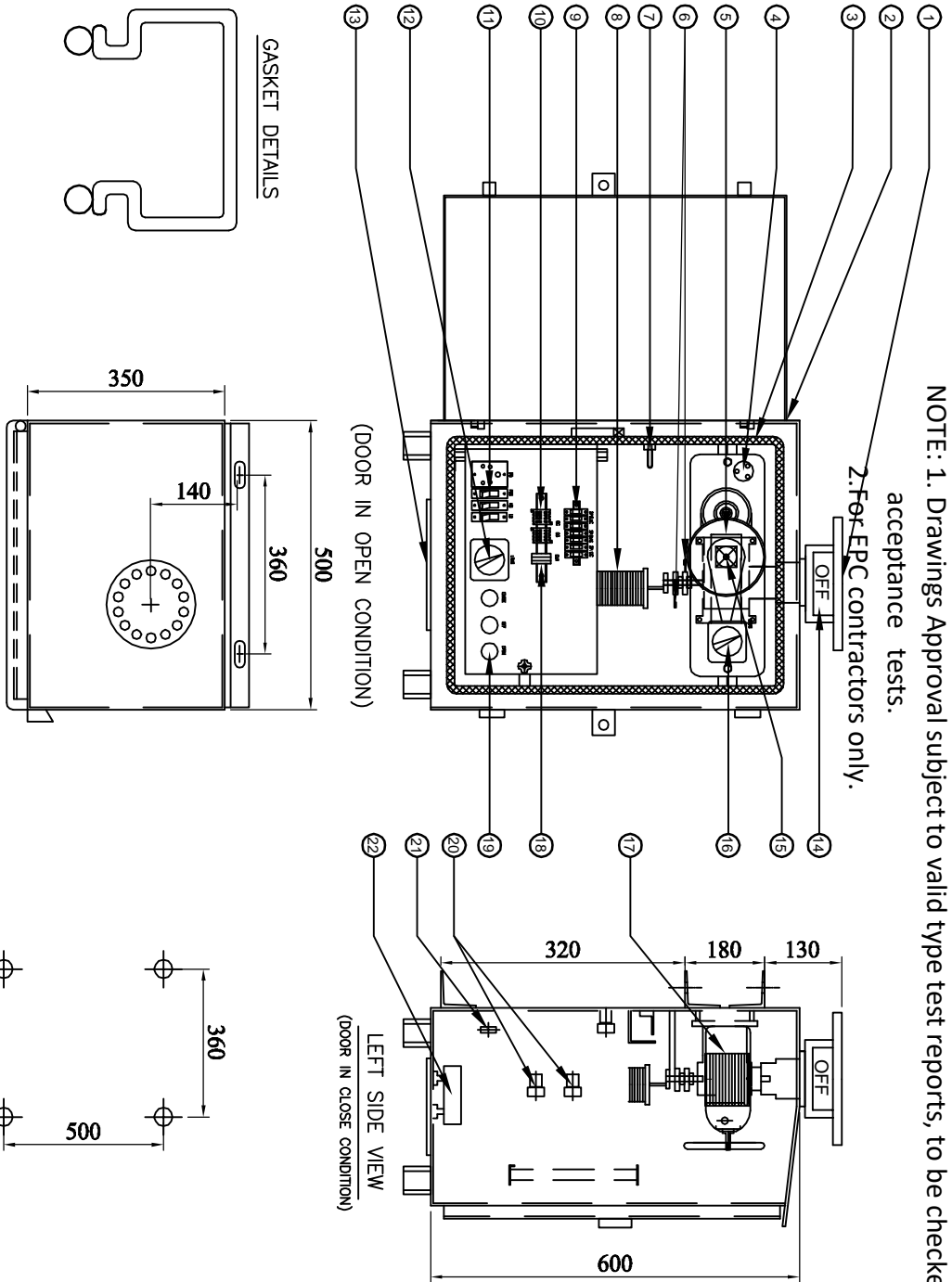
(T. SESHAGIRI RAO)
Managing Director



TRANSMISSION CORPORATION OF
ANDHRA PRADESH LTD

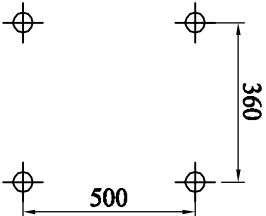
REVISIONS		D	C	B	A
TITLE: AP TRANSCO 245KV, 1200A, TP, HDB, RT, ISOLATOR WITHOUT E.S. (WITH MOTOR OPERATING MECHANISM) PAVANI POWER SYSTEMS PVT.LTD. Plot No. 06/056/4/6, K.K. OVERSEAS SOCIETY, KODIPALLI FOST, HYDERABAD - 500100. MEDICAL MAJKAGER DIST. TELANGANA					
SCALE: 1:1	DATE: 18-05-2023	DRAWN			
		CHECKED			
		APPROVED			
		SHEET 01 OF 06			
		DGC.No: PPSPT-APT-GAD-44-01			

NOTE: 1. Drawings Approval subject to valid type test reports, to be checked during acceptance tests.
2. For EPC contractors only.



- PART LIST:-**
1. 14-HOLES FLANGE
 2. CUBICAL WITH DOOR (3mm Alu. SHEET)
 3. RUBBER GASKET (EPDM)
 4. THORMOSTAT (30°C TO 85°C)
 5. REDACTION GEAR BOX
 6. LIMIT SWITCHES (OPEN & CLOSE)
 7. CUBICLE LAMP HOLDER
 8. AUXILIARY SWITCH - 12NO+12NC
 9. 3-POLE MCB-FOR MOTOR SUPPLY
2-POLE MCB-FOR SINGLE PHASE SUPPLY
 10. CONNECTORS FOR OPEN & CLOSE
 11. POWER SOCKET/LIGHT & HEATER SWITCHES
 12. LOCAL/REMOTE/MANUAL SELECTOR SWITCH
 13. DETACHABLE TYPE CABLE GLANDS PLATE
 14. ON/OFF INDICATOR
 15. MANUAL OPERATING ARRANGEMENT
 16. INTER LOCK ROTARY SWITCH
 17. MOTOR (0.5HP 415V AC, 50 Hz)
 18. OLR-OVER LODE RELAY
 19. PUSH BUTTONS
 20. TERMINAL BLOCK
 21. EARTHING TERMINAL-2 Nos.
 22. HEATER

Drawing approval subject to valid vendor registration



PLAN

ALL DIMENSIONS ARE IN MILLIMETERS

CUBICLE WILL BE POWDER COATED WITH LIGHT GRAY SHADE NO:631 OF IS : 5 DEGREE OF PROTECTION IP: 55 AS PER IS : 13947

20% SPARE TERMINALS WILL BE PROVIDED AND SHALL BE UNIFORMLY DISRIBUTED TO ALL TERMINAL BLOCKS EQUALLY

WIRING WILL BE DONE WITH 1100V.GRADE 2.5 Sq.MM CU STRANDED P.V.C. INSULATED CONDUCTOR

WEIGHT OF THE BOX : 95Kg (APPROX.)

PPSP L MAKE REDUCTION GEAR RATIO:20:1 MATERIALS EN8/STEEL

CHIEF ENGINEER/PROJECTS
APTRANSCO/VS/VIJAYAWADA

For Pavani Power Systems Pvt. Ltd.
(T. SESHAGIRI RAO)
Managing Director

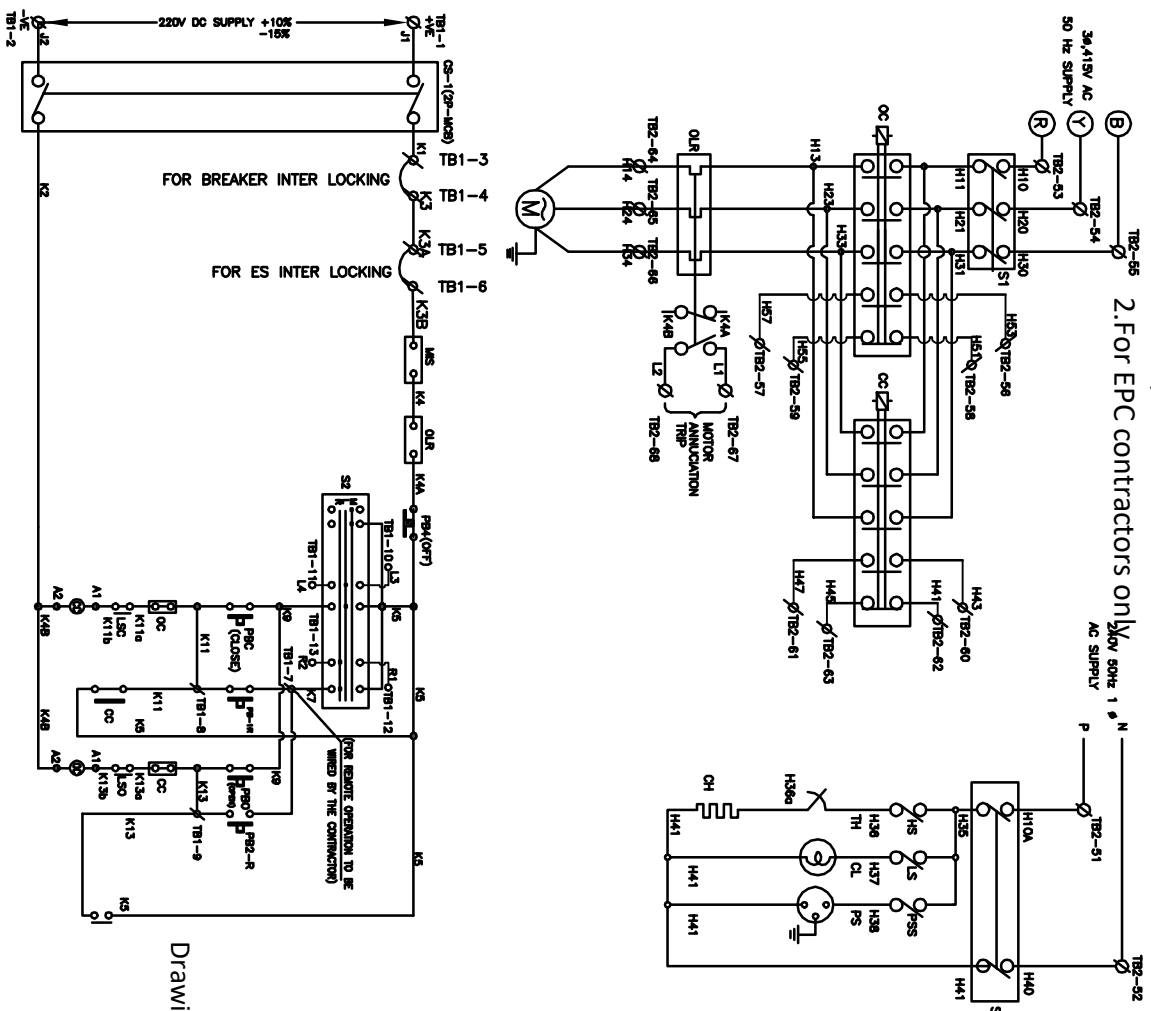


TRANSMISSION CORPORATION OF
ANDHRA PRADESH LTD

REVISIONS D C B A		TYPE: MOTOR OPERATING MECHANISM BOX (FOR 245KV ISOLATOR)	SCALE: 1:1 DATE: 18-05-2023 DRAWN:
PAYANI POWER SYSTEMS PVT.LTD. Plot No. 06/065/4/6, K.K. OPENERS SOCIETY, KODURU ROAD, HITEERABAD - 500100. MEDICAL MARKAGER DIST. TELANGANA		CHECKED:	APPROVED:
SHEET: 03 OF 06 DRG.No: PPSP-L-APT-MOM-44-03		APPROVED:	SHEET:

NOTE: 1. Drawings Approval subject to valid type test reports, to be checked during acceptance tests.

2. For EPC contractors only



Drawing approval subject to valid vendor registration

LEGEND	DESCRIPTION	MAKE
CC & OC	Close & Open contactors 220V DC, 7A	C&S/ SIEMENS/ Schneider/ ABB
CS1&CS2	Compact fluorescent lamp	PROVISION FOR LAMP.
S3	Cubic heater (80W,240V)	Grish Ego./Kontakt Pyrosensors
HS	AC 3ø 415V MCB-6A for motor	C&S/ SIEMENS/ Schneider/ ABB
MIS	AC 1ø 240V MCB-16A for AC supply	C&S/ SIEMENS/ Schneider/ ABB
LS	AC 1ø 240V, 6A one way switch for heater	Anchor/MARU
LSC	Manual interlock switch	Recom/Kaycee/Jadbadji/MANI
LSD	Lamp switch 240V, 6A one way switch	Anchor/MARU
OLR	Opens when the isolator opens, 10A 1NO+1NC	JAI BALAJI/MANI
PBC & PBO	Thermostat 30° to 85°C	Bhoskary/Mavis/Grish EGO
	Over load relay with SPP (1.0A TO 1.6A)	C&S/ SIEMENS/ Schneider/ ABB
	Close and open push buttons, 10A	Vishnov/Siemens/Schneider/C&S
	Power socket 6A, 1ø, 3pin, 230V	Anchor/CGL OR Equip.
	Power socket 6A, 1ø, 3pin, 230V	Anchor / Maru OR Equip.
	AC 1ø 230V one way switch	Anchor/Maru
	Local / Remote / Manual selector switch	Recom/Kaycee/Jadbadji/MANI
	Motor (0.5 HP 3ø 415V AC, 50Hz)	REMI/LHP/ELCEN/CGL
	08NO + 08 NC	Power Drives/Imax/Mani's
AUX SWITCH	Push button to OFF the circuit 10 A	Vishnov/Siemens/Schneider/C&S
	Terminal block.	Vin Mech/Elmex/Connectwell

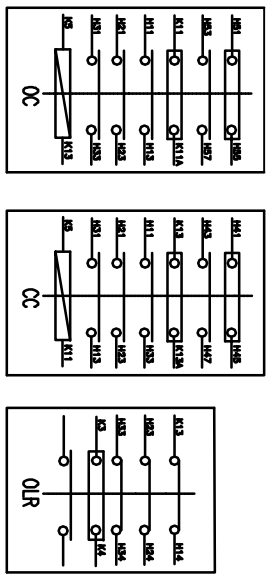
OPERATING INSTRUCTIONS:

1. Operation is possible only when the breaker is 'OPEN' ensure this condition is satisfied
2. For manual operation of isolator follow the following steps:
 - i) Keep selector switch (s2) in manual position.
 - ii) Rotate the rotary switch provided on the top panel board, insert the handle for the manual operation.
 - iii) Rotate the handle clockwise / anticlockwise to open / close the isolator respectively
 - iv) When the manual operation is not needed restore the position of rotary switch on top panel

For Pavani Power Systems Pvt. Ltd.


(T. SESHAGIRI RAO)
Managing Director

7622042/2023/EEMRT-ENE51



CHIEF ENGINEER/PROJECTS
APTRANSCO/VS/VIJAYAWADA

REV	DESCRIPTION	DATE
D	C	B
		A



TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD

AP TRANSCO

SCHMATIC DIAGRAM

FOR MOTOR / DC CONTROL PANEL.

PAVANI POWER SYSTEMS PVT.LTD.
Plot No. 06/065/4/6, K.K. OVERSEAS SOCIETY,
KORUPALLA POST, HYDERABAD - 500100.
MEDICAL MALAKGER DIST. TELANGANA

SCALE: 1:1

DATE: 18-05-2023

DRAWN:

CHECKED:

APPROVED:


SHEET: 04 OF 06

DRG. NO: PPSPT-APT-SD-A4-04

FOR PAVANI POWER SYSTEMS PVT. LTD.

NOTE: 1. Drawings Approval subject to valid type test reports, to be checked during acceptance tests.
 2.For EPC contractors only.

Drawing approval subject to valid vendor registration


		MANUFACTURED & SUPPLIED BY	
PAVANI POWER SYSTEMS PVT.LTD.		PAVANI POWER SYSTEMS PVT.LTD.	
PLOT No.05/055/A/6, K.K.OWNERS SOCIETY, DULAPALLY INDUSTRIAL AREA, KOMMIPALLY POST, HYDERABAD-500100, MEDCHAL MALKAJGIRI DIST. T.S.		PLOT No.05/055/A/6, K.K.OWNERS SOCIETY, DULAPALLY INDUSTRIAL AREA, KOMMIPALLY POST, HYDERABAD-500100, MEDCHAL MALKAJGIRI DIST. T.S.	
ISOLATOR RATING NAME PLATE			
CLIENT:	TRANSMISSION CORPORATION OF A.P LTD	ISOLATOR RATING NAME PLATE	
CUSTOMER:			
PO.No./DATE:			
YEAR OF MFG.	-----	SL.No.	-----
TYPE	DBR	FREQUENCY (Hz)	50
VOLTAGE (kV)	245	I.W. VOLTAGE	1050kVp
STC KA/SEC.	50/3	P.F.W. VOLTAGE(DRY)	460kVrms
CURRENT (A)	1200	OPERATING DRIVE	MOTOR
		CONTROL VOLTAGE	220 V DC

Since the supply of terminal connectors is not in the scope of manufacturer as mentioned in the drawings. The EPC contractor shall be instructed to supply the same line with CT/PT/CVT/Isolator/IVT /LA /Breaker requirement and capability.

Live part to ground clearance shall be maintained during erection as per IE rules.

CHIEF ENGINEER/PROJECTS
 APTRANSCO/VS/VIJAYAWADA

For Pavani Power Systems Pvt. Ltd.
 (T. SESHAGIRI RAO)
 Managing Director

		TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD	
AP TRANSCO		AP TRANSCO	
NAME PLATE DETAILS (FOR 245kV, ISOLATOR)		SCALE: 1:1	
REVISIONS		DATE	18-05-2023
D C B A		DRAWN	
		CHECKED	
PAVANI POWER SYSTEMS PVT.LTD.		APPROVED	
Plot No. 05/055/A/6, K.K.OWNERS SOCIETY, IDA, DULAPALLY, QUTHBULLAPUR MANDAL, KOMMIPALLY POST, HYDERABAD - 500100.		SHEET	06 OF 06
MEDCHAL MALKAJGIRI DIST. TELANGANA		DRG.No:	PPSP-APT-NPD-44-06