



**TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD .  
GUARANTEED TECHNICAL PARTICULARS  
GTPS FOR 33KV,800/1200/2000 AMPS ISOLATOR.**

Sr. No.	Description	Particulars		
1)	Type/Installation	DBCR, OUTDOOR TYPE		
2)	Manufacturer's Name and Country of Manufacture	TRITECH CORPORATION, INDIA		
3)	Standards according to which the isolators are manufactured	IS 9921, IEC129		
4)	Maximum design voltage at which the isolator can operate (kV)	36 KV		
5)	Frequency (Hz)	50 HZ		
6)	Rated Voltage (kV)	33 KV		
7)	Maximum current that can be safely interrupted by the isolator			
a)	Inductive (A & % PF)	0.7 A@0.15 PF		
b)	Capacitive (A & % PF)	0.7A@0.15PF		
8)	Continuous current rating Nominal (Amps) Under site conditions (Amps)	800/1200/2000 AMPS		
9)	Rated short time current			
a)	For 3 seconds (kA rms)	25 KA RMS		
b)	For 1 second (kA rms)	-		
c)	Rated peak short time current (kVp)	63 KAP		
10)	Current density at the minimum cross-section of	<b>800</b>	<b>1200</b>	<b>2000</b>
a)	Moving blade (Amps/Sq.mm)	2.5	2.5	2.5
b)	Terminal pad	AL 1.0	AL 1.0	AL. 1.0
c)	Contacts	2	2	2
d)	Terminal Connector	1	1	1.25
11)	Maximum Temp. rise of current carrying parts when carrying rated current continuously (deg.c)	WITHIN LIMITS OF IS/IEC		
12)	Derating factor for specified site conditions	UNITY		
13)	Insulation Levels			
a)	Impulse withstand voltage (kV peak) Phase to Earth & Isolating Distance	170 KV/195 KVP		
b)	Switching surge withstand voltage (kV peak) Phase to Earth & Isolating Distance	NOT APPLICABLE		
c)	Power Frequency withstand voltage (kV rms) Phase to Earth & Across isolating Distance	70/80 KV RMS FOR 1MINUTE		



	ii) No. of bearings, location and size	2, BELOW ROTATING INSULATOR STACK.
l)	Tandem pipe:	
	i) Size, length, class and no. of pipes	25 MM ID,CL B,GI PIPE-3.5 M
	ii) Size of shackle, screw	-
	iii) No. of bearings/bush and its material and size	BRASS BUSH.
m)	Type of interlock	MECHANICAL.
n)	Down pipe size, length and class	38 NB,CL B,GI PIPE
o)	Type of universal/swivel joint	
	i) Between bearing and down pipe	UNIVERSAL.
	ii) Between down pipe and operating mechanism	VERNIER TYPE
p)	Operating mechanism:	MAIN AND EARTH:MANUAL TYPE.
	i) Control cabinet	
	Material and thickness (12 Gauge - 2.64mm) of Steel or 10 mm thick Aluminium or Casting.	2.64 MM
	Degree of protection	IP 55
	Type size and No. of cable glands	CONTRACTORS SCOPE
	Whether removable gland plate provided	YES
q)	Base:	
	i) Size of steel sections used	100X50 MM FORMED
	ii) Overall size	100X50X1070 MM
	iii) Total weight	8.50 KG /POLE
r)	Terminal Connectors:	
	i) Clamp Body:	
	Alloy Composition	AL ALLOY TO IS 617
	Plating if any	NOT APPLICABLE
	Area at air cross -section	1600 SQ MM
	ii) Bolts and nuts size	
	Alloy Composition	MS HDG AS PER REL IS STD.
	Tensile strength	-----DO-----
	iii) Type of washers used	FLAT AND SPRING
	iv) Materials of braids	NOT APPLICABLE.
	v) Temperature rise when carrying rated current at 50 deg.c ambient (deg.c)	WITHIN LIMITS OF IS 5561.
	vi) Weight of each type of clamp (kg).	APP 1 KG FOR SINGLE & 2 KG FOR TWIN CONNECTOR



14)	Minimum clearance in air:	
a)	Between poles (mm)	1100MM FOR PHASE SPACING OF 1300 MM.
b)	Between live parts and earth (mm)	508MM
c)	Between live parts when switch is open:	
	i) On the same pole (mm)	715 MM FOR POLE SPACING OF 915 MM.
	ii) Between adjacent poles (mm)	1100MM
15)	Rated mechanical terminal load	
	a) Load along the terminal connector side (kg.)	NOT ASSIGNED IN IS/IEC
	b) Load across the terminal connector side (kg.)	NOT ASSIGNED IN IS/IEC
16)	Torque required to operate the switch in Kgm (Not specified)	MAIN-35KGM,EARTH-35 KGM
17)	Contact Zone	
a)	Horizontal deflection (mm)	NOT APPLICABLE FOR DOUBLE BREAK ISO.
b)	Vertical deflection (mm)	-----D0-----
c)	Total amplitude of longitudinal movement w.r.t. conductor supporting fixed contact (mm)	-----DO-----
18)	Design and Construction	
a)	No. of insulators per pole	THREE STACKS/POLE
b)	No. of breaks per pole	MAIN-2,ES-SINGLE
c)	Type of closing /Opening mechanism (Horizontal/Vertical break straight etc.)	MAIN-HORIZONTAL,EARTH SW-VERTICAL BREAK
d)	Contacts:	<b>800</b> <b>1200</b> <b>2000</b> <b>E/S</b>
	i) Material and grade	CU    CU    CU    CU
	ii) Cross-sectional area (mm)	518    777    1316    320
e)	Moving Blades:	<b>800</b> <b>1200</b> <b>2000</b> <b>E/S</b>
	i) Material and grade	CU    CU    CU    CU
	ii) Cross-sectional area (mm)	427    644    1056    300
f)	Contact Support:	
	i) Material and size of channel/block	MS HDG, 4MM
	ii) Material and size of plate	MS HDG., 6MM
g)	Rain hood - Material grade and size	MS HDG , 5MM
h)	Turn and twist mechanism	
	i) Material and size of clamps	MS HDG, 6MM
	ii) Material size of springs	SS, 2.64 MM DIA
	iii) Whether springs are encased	YES
i)	Nuts and Bolts:	
	i) Size, material and grade in live parts	LESS THAN 3/8" SS,ABOVE 5/8"HDG
	ii) Size, material and grade in other parts	3/8" ABOVE HDG
j)	Insulator base plate Material and size of plate below insulators	MS HDG-10MM
k)	Bearings:	
	i) Material and size of housing	AL ALLOY SUITABLE FOR 25 MM DIA SHAFT

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Chief Engineer / Construction-  
APTRANSCO, Vidyut Soudha,  
Hyderabad - 500 082. 28



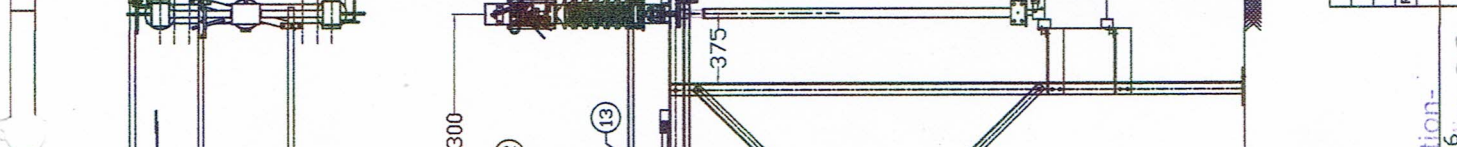
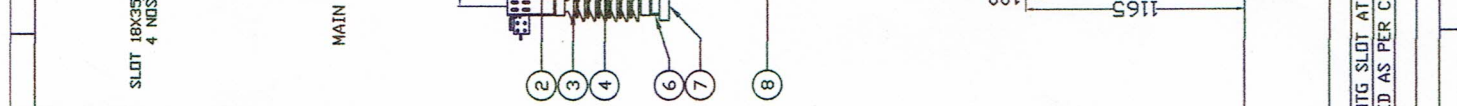
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SR.	PART LIST	QTY.
1	FIXED CONTACT ASSEMBLY	6 NOS
2	MOVING CONTACT ASSEMBLY	3 NOS
3	INSULATOR	3 NOS
4	TOP OPERATING MECHANISM	9 NOS
5	TANDEM G.I. PIPE (NB 25) CLASS-B 3.5MTR	2 NOS
6	ELEVATOR CHANNEL	6 NOS
7	BASE CHANNEL (100X50)	3 NOS
8	OPERATING PIPE (NB 38) MAIN	1 NO
9	MANUAL OPERATING BOX FOR MAIN	1 NO
10	OPERATING PIPE (NB 38) FOR EARTH	1 NO
11	OPERATING PIPE (NB 38) EARTH	1 NO
12	EARTH FIX CONTACT ASSEMBLY	3 NOS
13	EARTH MOVING CONTACT ASSEMBLY	3 NOS

NOTES:

1. ALL DIMENSIONS ARE IN MM.
2. ALL FERROUS PARTS ARE IN HOT DIP GALVANISED.
3. ALL NON FERROUS CONTACT POINTS ARE SILVER PLATED. (15 MICRONS)
4. THE MAIN ROTATING POST HAS TWO NOS. OF BEARING.
5. ALL GI PIPES ARE 'B' CLASS AS PER IS4239.
6. MOUNTING STRUCTURE & MOUNTING FASTENERS ARE IN THE SCOPE OF CONTRACTOR, NOT IN TRITECH SCOPE.
7. MANUFACTURING TOLERANCES:  
 ID UP TO 50MM - ±3% ID 51MM TO 100MM - ±2%  
 ID 101MM TO 300MM - ±1% IV) ABOVE 300MM - ±0.5%  
 WEIGHT OF THE METALLIC'S (APPROX)- 260KGS
8. STRUCTURE NOT IN TRITECH SCOPE OF SUPPLY.



REV NO	DATE	REVISION	DRWN	CHKD	APPD	SIGN	DATE	TITLE
R2	22.02.16	BASE MTG SLOT AT 394MM ADDED.	KUSHAL	P.SHELAR	P.SHELAR	KUSHAL	10.12.15	G.A. DRAWING OF 33kV 800/1200/2000AMP ISOLATOR WITH EARTH SWITCH (CN APTRANSCO STRUCTURE)
R1	10.12.15	REVISED AS PER COMMENTS.	P.SHELAR	P.SHELAR	P.SHELAR	P.SHELAR	10.12.15	

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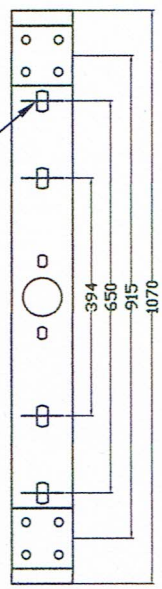


SR.	PART LIST	QTY.
1	FIXED CONTACT ASSEMBLY	6 NOS
2	MOVING CONTACT ASSEMBLY	3 NOS
3	INSULATOR	9 NOS
4	ROTATING STOOL POST	3 NOS
5	TANDEM G.I. PIPE (NB 25) CLASS-B 3.5MTR	2 NOS
6	ELEVATOR CHANNEL	6 NOS
7	BASE CHANNEL (100X50)	3 NOS
8	OPERATING PIPE (NB 38)	1 NO
9	MANUAL OPERATING BOX FOR MAIN	1 NO

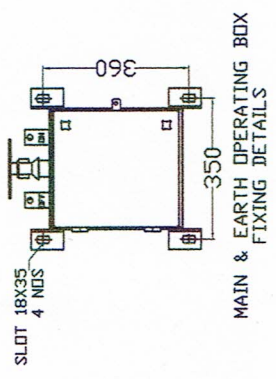
**NOTES:**

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2. ALL FERROUS PARTS ARE IN HOT DIP GALVANISED.
3. ALL NON FERROUS CONTACT POINTS ARE SILVER PLATED. (15 MICRONS)
4. THE MAIN ROTATING POST HAS TWO NOS. OF BEARING.
5. ALL GI PIPES ARE 'B' CLASS AS PER IS1239.
6. MOUNTING STRUCTURE & MOUNTING FASTNERS ARE IN THE SCOPE OF CONTRACTOR, NOT IN TRITECH SCOPE.
7. MANUFACTURING TOLERANCES:  
 I) UP TO 50MM - ±3%  
 II) 51MM TO 100MM - ±2%  
 III) 101MM TO 300MM - ±1% IV) ABOVE 300MM - ±0.5%  
 WEIGHT OF THE METALLIC'S (APPX)- 190KGS
- 8.

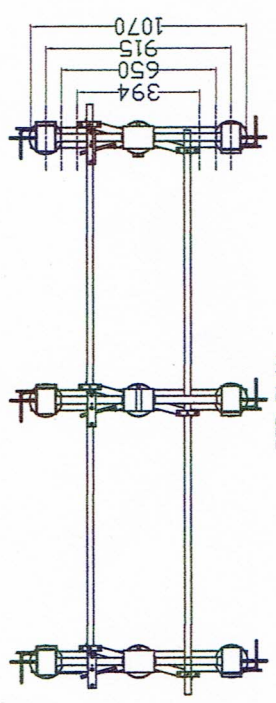
18X35MM SLOT, 2NOS



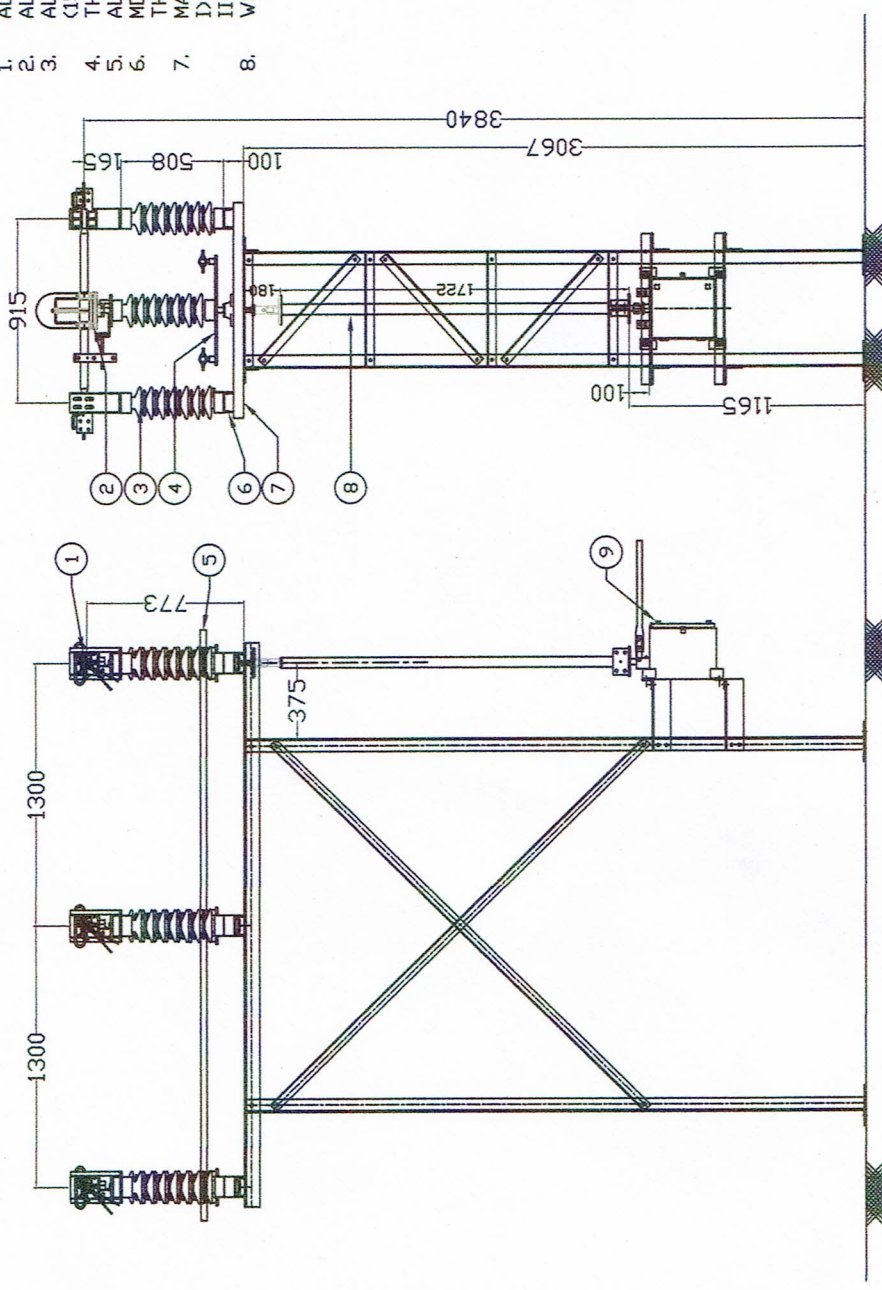
BASE CHANNEL MOUNTING DETAILS



MAIN & EARTH OPERATING BOX FIXING DETAILS



TOP PLAN



R.H. SIDE VIEW

FRONT ELEVATION

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

**TRITECH CORPORATION**

G.A. DRAWING OF  
 33KV 800/1200/2000AMP ISOLATOR  
 WITHOUT EARTH SWITCH  
 (ON APTRANSCO STRUCTURE)

NAME	SIGN	DATE	TITLE
DRWN	KUSHAL	KPD	10.12.15
CHKD	P.SHELAR	PPS	10.12.15
APPD	P.SHELAR	PPS	10.12.15

DWG. NO: 13204001AP\_R2

SIZE: A4  
 SHEET: 2/5

REV NO	DATE	REVISION
R2	22.02.16	BASE MTG SLOT AT 394MM ADDED.
R1	10.12.15	REVISED AS PER COMMENTS.

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Chief Engineer Construction-  
 APTTRANSCO, Midutur Soudha,  
 Hyderabad - 500 082.

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SR.	PART LIST
1	FC C BRACKET / RAINHOOD
2	FC ARCING HORN
3	SPACER
4	FC SPRINGS (SS)
5	FC M CONTACT
6	TERMINAL PAD (AL.)
7	SUPPORTING CHANNEL
8	MC CANDOPY
9	MC SUPPORTING BLOCK (AL.)
10	MC COPPER TUBE HDEC
11	MC ARCING HORN
12	CLAMP FOR TURN & TWIST
13	MC BASE PLATE FOR TURN & TWIST
14	BEARING HOUSING
15	MC SPRING (SS)

**NOTE:**

- ALL DIMENSIONS ARE IN MM
- ALL FERROUS PARTS ARE HOT DIP GALVANISED
- ALL NON FERROUS CONTACTS POINTS ARE SILVER PLATED
- TURN-TWIST MECHANISM ARE FACTORY SET & LOCKED, TOLERANCES:
- 1) DP TO 50MM - ±3% ID 51MM TO 100MM - ±2% ID 101MM TO 300MM - ±1% IV) ABOVE 300MM - ±0.5% FOR CONTACT DETAILS FIX CONTACT 'A' & MOVING CONTACT 'B' DETAILS REFER TABLE ANNEXURE 1
- MOVING CONTACT LENGTH AND FIX CONTACT WILL VARY AS PER FIX CONTACT PAIRS REQUIRED AS PER ANNEXURE 1.

**ANNEXURE 1**

CURRENT RATING	FIXED CONTACT (A)			MOVING CONTACT (B)			TERMINAL PAD			
	SIZE MMxMM	PAIRS NO	AREA SQMM	DD MM	ID MM	(L) LENGTH MM		AREA SQMM	CURRENT DENSITY A/SQMM	SIZE MMxMM
800	35X3.7	2	518	1.5400	38	30	1008	427	1.8700	100X12 AL.
1200	35X3.7	3	777	1.5400	38	25	1046	644	1.8600	100X12 AL.
2000	35X4.7	4	1316	1.5900	50	34	1084	1056	1.8800	100X25 AL.

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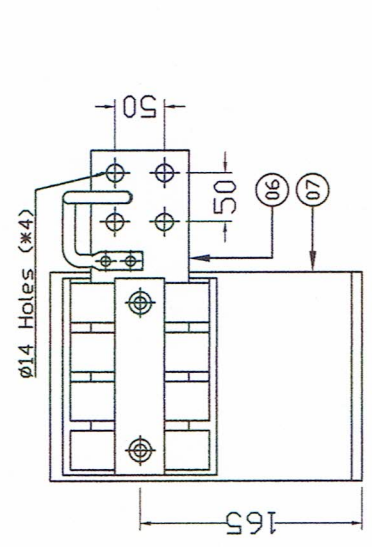
**TRITECH CORPORATION**

NAME	DATE	DATE	DATE
DRWN	KUSHAL	KPD	10.12.15
CHKD	P.SHELAR	PPS	10.12.15
APPD	P.SHELAR	PPS	10.12.15

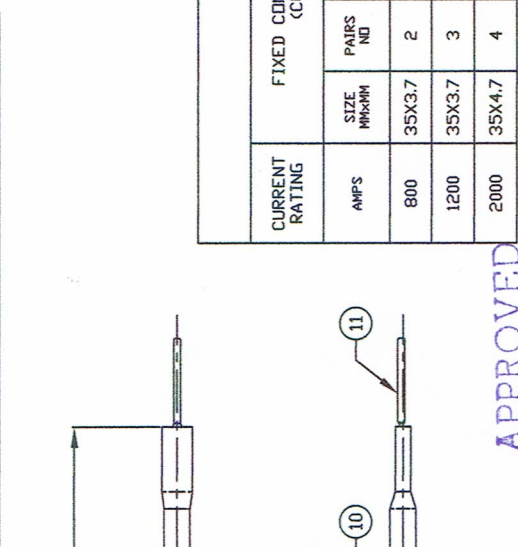
ITEM: MAIN CONTACT DETAILS  
FDR 33kV 800/1200/2000AMP ISOLATOR

DRWG. NO: A320MC00AP\_R1

SIZE: A4  
SHEET: 3/5



FRONT ELEVATION  
SIDE VIEW  
DETAILS OF MAIN FIX CONTACT



FRONT ELEVATION  
PLAN  
DETAILS OF MAIN MOVING CONTACT

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Chief Engineer Construction  
APTRANSCO, Vidyut Soudha,  
Hyderabad - 500 082. 3/1

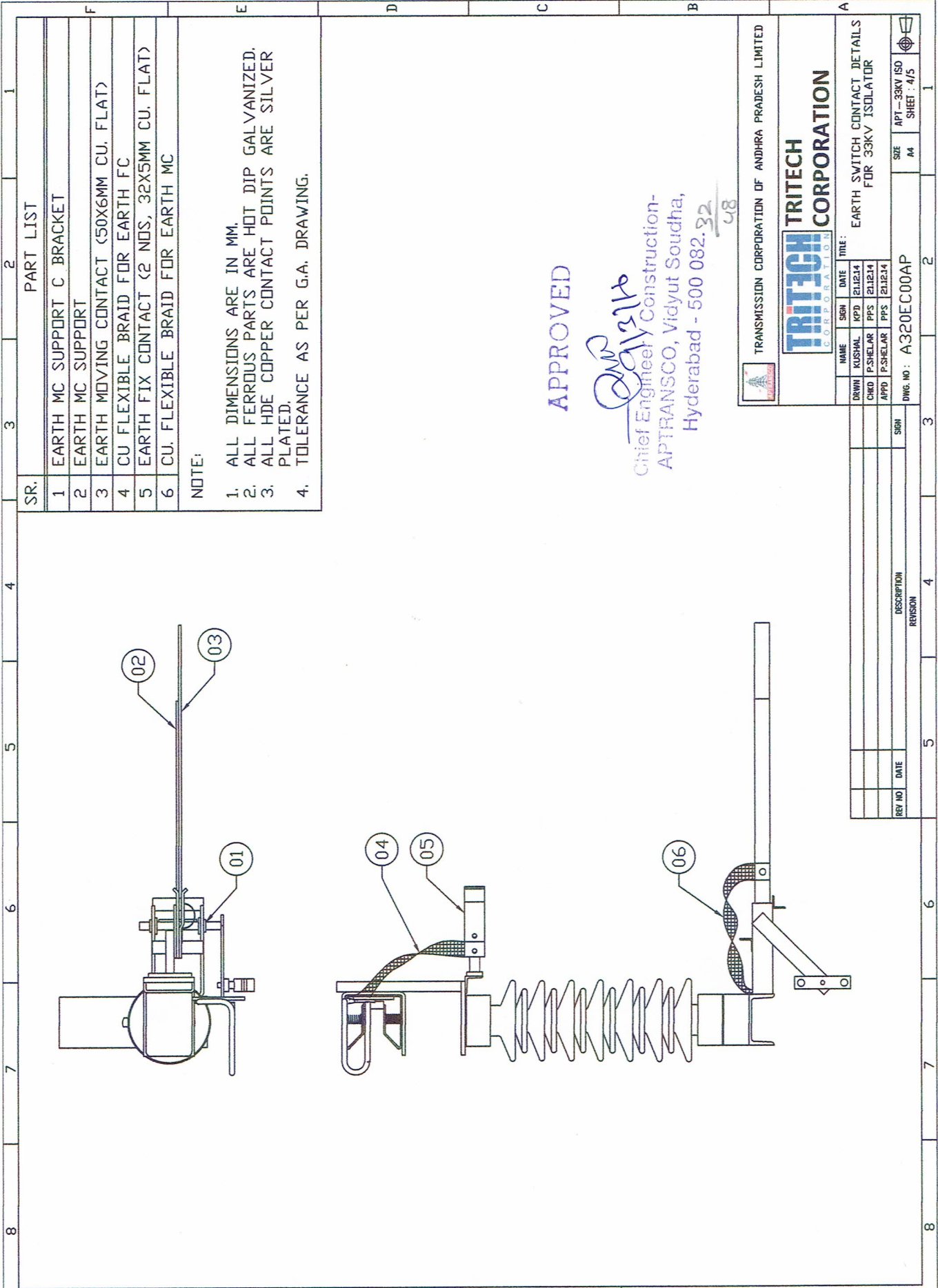
REV NO	DATE	REV NO	DATE
R1	10.12.15		

REVISOR: PPS

REVISION: AS PER COMMENTS.



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**PART LIST**

SR.	DESCRIPTION
1	EARTH MC SUPPORT C BRACKET
2	EARTH MC SUPPORT
3	EARTH MOVING CONTACT (50X6MM CU. FLAT)
4	CU FLEXIBLE BRAID FOR EARTH FC
5	EARTH FIX CONTACT (2 NOS, 32X5MM CU. FLAT)
6	CU. FLEXIBLE BRAID FOR EARTH MC

**NOTE:**

1. ALL DIMENSIONS ARE IN MM.
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED.
3. ALL HIDE COPPER CONTACT POINTS ARE SILVER PLATED.
4. TOLERANCE AS PER G.A. DRAWING.

**APPROVED**

*QMR*  
 Chief Engineer / Construction-  
 APTRANSCO, Vidyut Soudha,  
 Hyderabad - 500 082. 22  
 48

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

**TRITECH CORPORATION**

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

NAME	SIGN	DATE	TITLE
DRWN KUSHAL KPD		21/12/14	
CHKD P.SHELAR PPS		21/12/14	
APPD P.SHELAR PPS		21/12/14	

DRG. NO : A320EC00AP

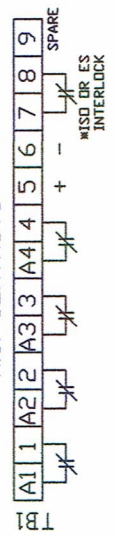
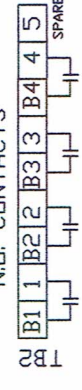
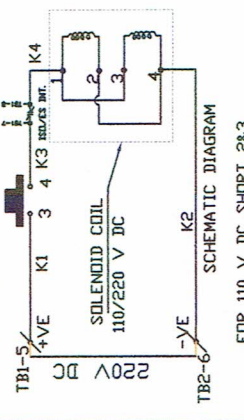
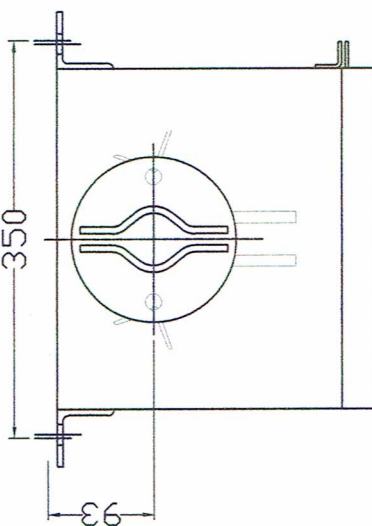
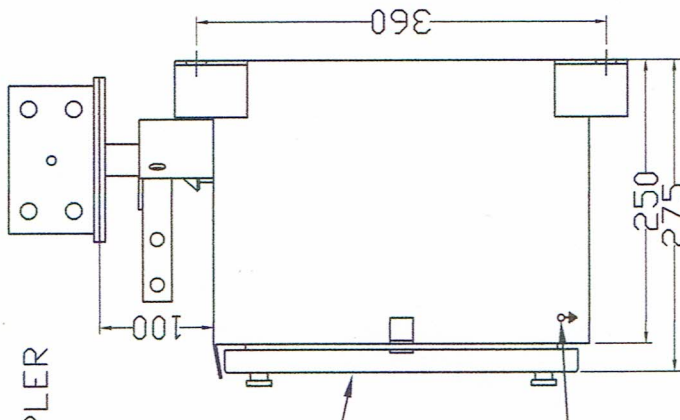
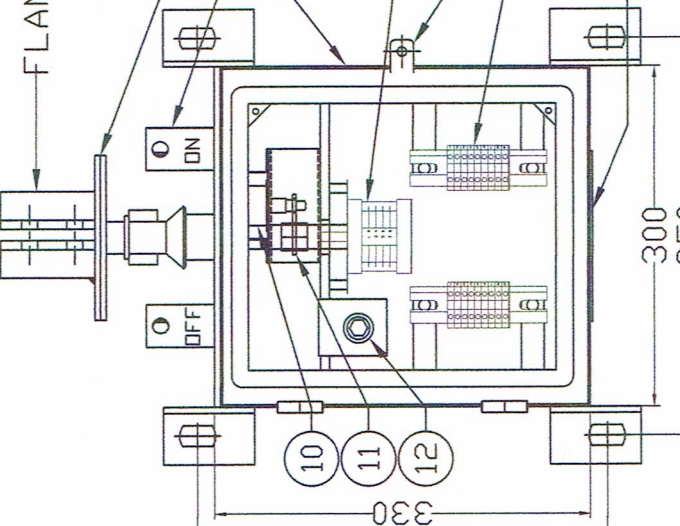
SIZE : A4

APT - 33KV ISO SHEET - 4/5

**TRITECH CORPORATION**

EARTH SWITCH CONTACT DETAILS FOR 33KV ISOLATOR



<p>MAKE OF OPERATING BOX - TRITECH CORP.</p>	<p>SR. DESCRIPTION</p>	<p>1 TOP FLANGE</p> <p>2 ON-OFF STOPPER</p> <p>3 BOX (12 S.W.G., 2.64MM THK.)</p> <p>4 DOOR WITH GASKET NEOPRENE 3MM THK.</p> <p>5 AUX SWITCH (4NO + 4NC)</p> <p>6 PROVISION FOR PADLOCK (WITHOUT LOCK)</p> <p>7 TERMINAL CONNECTOR 20% EXTRA (STUD TYPE)</p> <p>8 EARTHING TERMINAL (BOTH SIDE)</p> <p>9 REMOVABLE GLAND PLATE</p> <p>10 SOLENOID COIL</p> <p>11 INTERLOCK DISC</p> <p>12 PUSH BUTTON</p>	<p>N.C. CONTACTS</p>  <p>N.D. CONTACTS</p>  <p>AUXILIARY CONTACTS 4NO+4NC</p> <p><i>Earth mechanism 4NO+4NC</i></p>	<p>APPROVED</p> <p><i>[Signature]</i></p> <p>Chief Engineer / Construction- APTRANSCO, Vidyut Soudha, Hyderabad - 500 082. 33</p>	<p>TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED</p> <p><b>TRITECH CORPORATION</b></p>	<table border="1"> <tr> <th>NAME</th> <th>SGN</th> <th>DATE</th> <th>TITLE</th> </tr> <tr> <td>DRWN KUSHAL</td> <td>KPD</td> <td>10.12.15</td> <td></td> </tr> <tr> <td>CHKD P.SHEKHAR</td> <td>PPS</td> <td>10.12.15</td> <td></td> </tr> <tr> <td>APPD P.SHEKHAR</td> <td>PPS</td> <td>10.12.15</td> <td></td> </tr> </table> <p>MANUAL OPERATING BOX WITH CASTLE INTERLOCK FOR MAIN &amp; EARTH SWITCH</p> <p>SIZE A4 SHEET : 5/5</p>	NAME	SGN	DATE	TITLE	DRWN KUSHAL	KPD	10.12.15		CHKD P.SHEKHAR	PPS	10.12.15		APPD P.SHEKHAR	PPS	10.12.15		<table border="1"> <tr> <th>REV NO</th> <th>DATE</th> <th>REV NO</th> <th>REVISION</th> </tr> <tr> <td>R1</td> <td>10.12.15</td> <td></td> <td>REVISED IN LINE WITH APTRANSCO STRUCTURE.</td> </tr> </table>	REV NO	DATE	REV NO	REVISION	R1	10.12.15		REVISED IN LINE WITH APTRANSCO STRUCTURE.	<p>DWG. NO. : BMN04DI0AP</p>	<p>APPROVED</p> <p><i>[Signature]</i></p> <p>Chief Engineer / Construction- APTRANSCO, Vidyut Soudha, Hyderabad - 500 082. 33</p>	<p>TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED</p> <p><b>TRITECH CORPORATION</b></p>	<table border="1"> <tr> <th>NAME</th> <th>SGN</th> <th>DATE</th> <th>TITLE</th> </tr> <tr> <td>DRWN KUSHAL</td> <td>KPD</td> <td>10.12.15</td> <td></td> </tr> <tr> <td>CHKD P.SHEKHAR</td> <td>PPS</td> <td>10.12.15</td> <td></td> </tr> <tr> <td>APPD P.SHEKHAR</td> <td>PPS</td> <td>10.12.15</td> <td></td> </tr> </table> <p>MANUAL OPERATING BOX WITH CASTLE INTERLOCK FOR MAIN &amp; EARTH SWITCH</p> <p>SIZE A4 SHEET : 5/5</p>	NAME	SGN	DATE	TITLE	DRWN KUSHAL	KPD	10.12.15		CHKD P.SHEKHAR	PPS	10.12.15		APPD P.SHEKHAR	PPS	10.12.15		<table border="1"> <tr> <th>REV NO</th> <th>DATE</th> <th>REV NO</th> <th>REVISION</th> </tr> <tr> <td>R1</td> <td>10.12.15</td> <td></td> <td>REVISED IN LINE WITH APTRANSCO STRUCTURE.</td> </tr> </table>	REV NO	DATE	REV NO	REVISION	R1	10.12.15		REVISED IN LINE WITH APTRANSCO STRUCTURE.	<p>DWG. NO. : BMN04DI0AP</p>	<p>TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED</p> <p><b>TRITECH CORPORATION</b></p>	<table border="1"> <tr> <th>NAME</th> <th>SGN</th> <th>DATE</th> <th>TITLE</th> </tr> <tr> <td>DRWN KUSHAL</td> <td>KPD</td> <td>10.12.15</td> <td></td> </tr> <tr> <td>CHKD P.SHEKHAR</td> <td>PPS</td> <td>10.12.15</td> <td></td> </tr> <tr> <td>APPD P.SHEKHAR</td> <td>PPS</td> <td>10.12.15</td> <td></td> </tr> </table> <p>MANUAL OPERATING BOX WITH CASTLE INTERLOCK FOR MAIN &amp; EARTH SWITCH</p> <p>SIZE A4 SHEET : 5/5</p>	NAME	SGN	DATE	TITLE	DRWN KUSHAL	KPD	10.12.15		CHKD P.SHEKHAR	PPS	10.12.15		APPD P.SHEKHAR	PPS	10.12.15	
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<p>PUSH BUTTON N/O CONTACT</p>  <p>SOLENOID COIL 110/220 V DC</p> <p>SCHMATIC DIAGRAM</p> <p>FDR 110 V DC SHORT 2&amp;3 FDR 220 V DC SHORT 1TD3&amp; 2TD4</p> <p><b>ELECTRICAL INTERLOCKING CIRCUIT DIAGRAM</b></p>		<p>FLANGE COUPLER</p> 		<p>NOTE:</p> <ol style="list-style-type: none"> <li>ALL DIMENSIONS ARE IN MM</li> <li>BOX POWDER COATED AS PER IC5</li> <li>THICKNESS OF POWDER COATING 0.01MM±0.005 MICRON</li> <li>REMOVABLE GASKET NEOPRENE LIGHT GRAY STRUCTURE (LG 63)</li> <li>REMOVABLE GASKET NEOPRENE 3MM THK.</li> <li>MANUFACTURING TOLERANCES: ±5%</li> <li>INTERLOCK IN MAIN ISOLATOR WILL BE EARTH SWITCH NC CONTACT OF THE AUXILIARY CONTACT.</li> <li>INTERLOCK IN EARTH SWITCH WILL BE MAIN ISOLATOR NC CONTACT OF THE AUXILIARY CONTACT.</li> </ol>	<p>APPROVED</p> <p><i>[Signature]</i></p> <p>Chief Engineer / Construction- APTRANSCO, Vidyut Soudha, Hyderabad - 500 082. 33</p>	<p>TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED</p> <p><b>TRITECH CORPORATION</b></p>	<table border="1"> <tr> <th>NAME</th> <th>SGN</th> <th>DATE</th> <th>TITLE</th> </tr> <tr> <td>DRWN KUSHAL</td> <td>KPD</td> <td>10.12.15</td> <td></td> </tr> <tr> <td>CHKD P.SHEKHAR</td> <td>PPS</td> <td>10.12.15</td> <td></td> </tr> <tr> <td>APPD P.SHEKHAR</td> <td>PPS</td> <td>10.12.15</td> <td></td> </tr> </table> <p>MANUAL OPERATING BOX WITH CASTLE INTERLOCK FOR MAIN &amp; EARTH SWITCH</p> <p>SIZE A4 SHEET : 5/5</p>	NAME	SGN	DATE	TITLE	DRWN KUSHAL	KPD	10.12.15		CHKD P.SHEKHAR	PPS	10.12.15		APPD P.SHEKHAR	PPS	10.12.15		<table border="1"> <tr> <th>REV NO</th> <th>DATE</th> <th>REV NO</th> <th>REVISION</th> </tr> <tr> <td>R1</td> <td>10.12.15</td> <td></td> <td>REVISED IN LINE WITH APTRANSCO STRUCTURE.</td> </tr> </table>	REV NO	DATE	REV NO	REVISION	R1	10.12.15		REVISED IN LINE WITH APTRANSCO STRUCTURE.	<p>DWG. NO. : BMN04DI0AP</p>	<p>TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED</p> <p><b>TRITECH CORPORATION</b></p>	<table border="1"> <tr> <th>NAME</th> <th>SGN</th> <th>DATE</th> <th>TITLE</th> </tr> <tr> <td>DRWN KUSHAL</td> <td>KPD</td> <td>10.12.15</td> <td></td> </tr> <tr> <td>CHKD P.SHEKHAR</td> <td>PPS</td> <td>10.12.15</td> <td></td> </tr> <tr> <td>APPD P.SHEKHAR</td> <td>PPS</td> <td>10.12.15</td> <td></td> </tr> </table> <p>MANUAL OPERATING BOX WITH CASTLE INTERLOCK FOR MAIN &amp; EARTH SWITCH</p> <p>SIZE A4 SHEET : 5/5</p>	NAME	SGN	DATE	TITLE	DRWN KUSHAL	KPD	10.12.15		CHKD P.SHEKHAR	PPS	10.12.15		APPD P.SHEKHAR	PPS	10.12.15																													
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**TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD .  
GUARANTEED TECHNICAL PARTICULARS  
GTPS FOR 145KV,800/1600 AMPS ISOLATOR.**

Sr. No.	Description	Particulars	
1)	Type/Installation	DBCR, OUTDOOR TYPE	
2)	Manufacturer's Name and Country of Manufacture	TRITECH CORPORATION, INDIA	
3)	Standards according to which the isolators are manufactured	IS 9921, IEC129	
4)	Maximum design voltage at which the isolator can operate (kV)	145 KV	
5)	Frequency (Hz)	50 HZ	
6)	Rated Voltage (kV)	132 KV	
7)	Maximum current that can be safely interrupted by the isolator		
a)	Inductive (A & % PF)	0.7 A@0.15 PF	
b)	Capacitive (A & % PF)	0.7A@0.15PF	
8)	Continuous current rating Nominal (Amps) Under site conditions (Amps)	800/1600 AMPS	
9)	Rated short time current	MAIN	EARTH
a)	For 3 seconds (kA rms)	31.5 KA	31.5
b)	For 1 second (kA rms) (As per Spec - 31.5)	-	
c)	Rated peak short time current (kVp)	79 KAP	79
10)	Current density at the minimum cross-section of	<b>800</b>	<b>1600</b>
a)	Moving blade (Amps/Sq.mm)	2.5	2.5
b)	Terminal pad	AL 1.0	AL 1.0
c)	Contacts	2	2
d)	Terminal Connector	1	1.25
11)	Maximum Temp. rise of current carrying parts when carrying rated current continuously (deg.c)	WITHIN LIMITS OF IS/IEC	
12)	Derating factor for specified site conditions	UNITY	
13)	Insulation Levels		
a)	Impulse withstand voltage (kV peak) Phase to Earth & Isolating Distance	650 KV/750 KVP	
b)	Switching surge withstand voltage (kV peak) Phase to Earth & Isolating Distance	NOT APPLICABLE	
c)	Power Frequency withstand voltage (kV rms) Phase to Earth & Across isolating Distance	275/315 KV RMS FOR 1MINUTE	

Tritech Corporation, Gajra Udyog Ware House Complex, OPP. Nirmal Ashram Gurudwara Rajur Bahula, Mumbai- Agra Highway, Nashik-422010. E- Mail : [tritech.corp@gmail.com](mailto:tritech.corp@gmail.com)  
[Satyakrishna1957@gmail.com](mailto:Satyakrishna1957@gmail.com). MOB : 9441210508.




14)	Minimum clearance in air:			
a)	Between poles (mm)	2600MM FOR PHASE SPACING OF 3000 MM.		
b)	Between live parts and earth (mm)	1500MM		
c)	Between live parts when switch is open:			
	i) On the same pole (mm)	1900MM FOR POLE SPACING OF 2135MM.		
	ii) Between adjacent poles (mm)	2600MM		
15)	Rated mechanical terminal load			
a)	Load along the terminal connector side (kg.)	500N		
b)	Load across the terminal connector side (kg.)	170N		
16)	Torque required to operate the switch in Kgm (Not specified)	MAIN-35KGM,EARTH-35 KGM		
17)	Contact Zone			
a)	Horizontal deflection (mm)	NOT APPLICABLE FOR DOUBLE BREAK ISO.		
b)	Vertical deflection (mm)	-----D0-----		
c)	Total amplitude of longitudinal movement w.r.t. conductor supporting fixed contact (mm)	-----DO-----		
18)	Design and Construction			
a)	No. of insulators per pole	THREE STACKS/POLE		
b)	No. of breaks per pole	MAIN-2,ES-SINGLE		
c)	Type of closing /Opening mechanism (Horizontal/Vertical break straight etc.)	MAIN-HORIZONTAL,EARTH SW-VERTICAL BREAK		
d)	Contacts:	<b>800</b>	<b>1600</b>	<b>E/S</b>
	i) Material and grade	CU	CU	CU
	ii) Cross-sectional area (mm)	518	1008	420
e)	Moving Blades:	<b>800</b>	<b>1600</b>	<b>E/S</b>
	i) Material and grade	CU	CU	CU
	ii) Cross-sectional area (mm)	427	851	427
f)	Contact Support:			
	i) Material and size of channel/block	MS HDG, 4MM		
	ii) Material and size of plate	MS HDG., 6MM		
g)	Rain hood - Material grade and size	MS HDG , 5MM		
h)	Turn and twist mechanism			
	i) Material and size of clamps	MS HDG, 6MM		
	ii) Material size of springs	SS, 2.6 MM DIA		
	iii) Whether springs are encased	YES		
i)	Nuts and Bolts:			
	i) Size, material and grade in live parts	LESS THAN 3/8" SS, ABOVE 5/8"HDG		
	ii) Size, material and grade in other parts	3/8" ABOVE HDG		
j)	Insulator base plate Material and size of plate below insulators	MS HDG-10MM		
k)	Bearings:			
	i) Material and size of housing	AL ALLOY,SUITABLE FOR 40 MM DIA SHAFT		



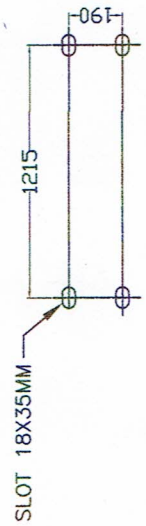
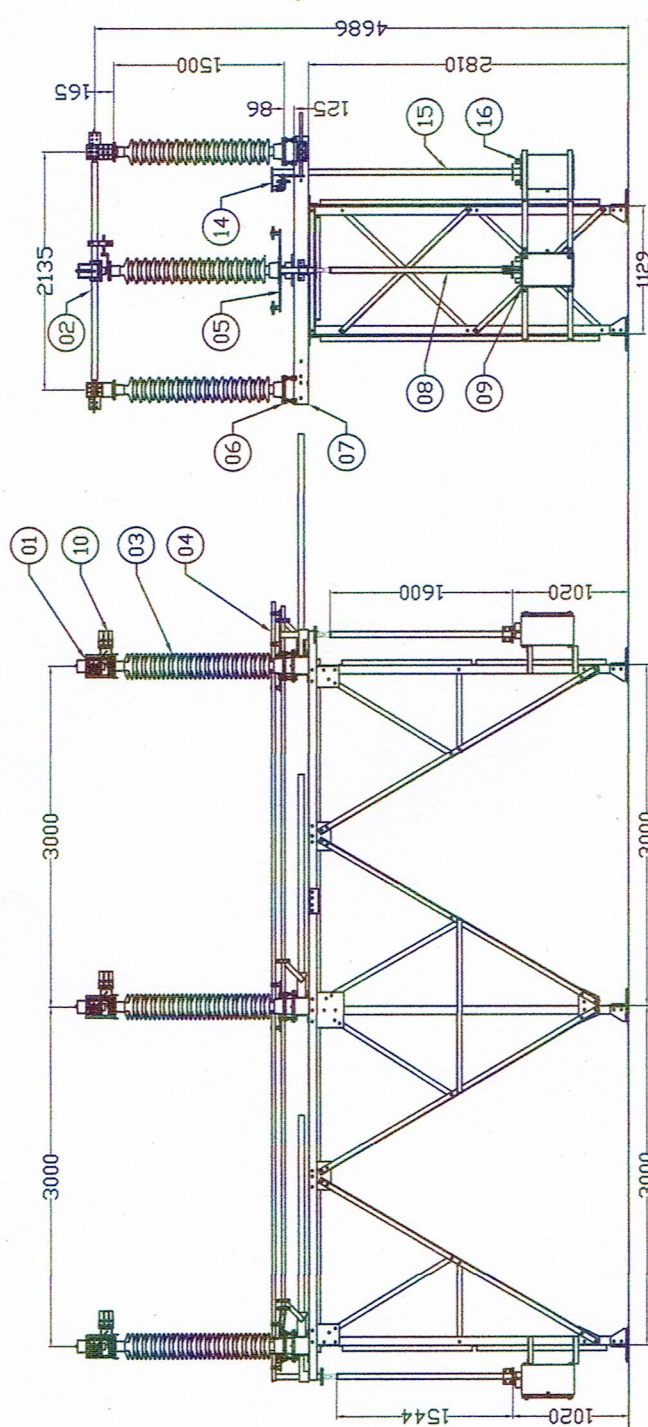
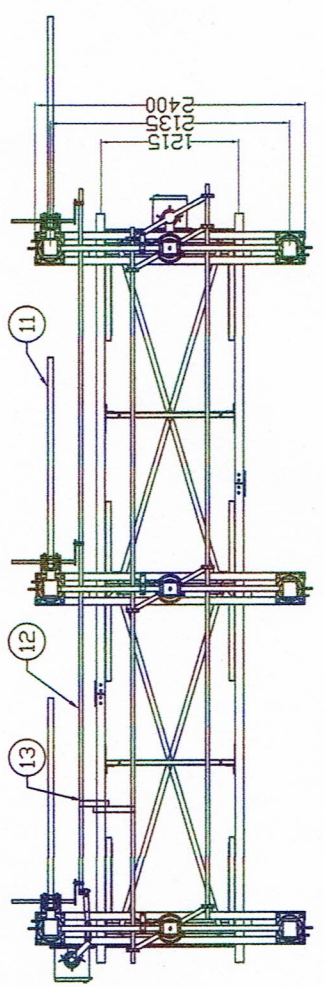
	ii) No. of bearings, location and size	2, BELOW ROTATING INSULATOR STACK.
l)	Tandem pipe:	
	i) Size, length, class and no. of pipes	32 ID,CL B,GI PIPE-7M
	ii) Size of shackle, screw	-
	iii) No. of bearings/bush and its material and size	BRASS BUSH.
m)	Type of interlock (Electromagnet)	ELECTRO MECHANICAL.
n)	Down pipe size, length and class	50 NB,CL B,GI PIPE
o)	Type of universal/swivel joint	
	i) Between bearing and down pipe	UNIVERSAL.
	ii) Between down pipe and operating mechanism	VERNIER TYPE
p)	Operating mechanism:	MAIN AND EARTH:REDUCTION GEAR.
	i) Control cabinet	
	Material and thickness (12 Gauge - 2.64mm) of Steel or 10 mm thick Aluminium or Casting.	2.64 MM
	Degree of protection	IP 55
	Type size and No. of cable glands	CONTRACTORS SCOPE
	Whether removable gland plate provided	YES
q)	Base:	
	i) Size of steel sections used	125x65 MM FORMED
	ii) Overall size	125X280X2400 MM
	iii) Total weight	60 KG /POLE
r)	Terminal Connectors:	
	i) Clamp Body:	
	Alloy Composition	AL ALLOY TO IS 617
	Plating if any	NOT APPLICABLE
	Area at air cross -section	1600 SQ MM
	ii) Bolts and nuts size	
	Alloy Composition	MS HDG AS PER REL IS STD.
	Tensile strength	-----DO-----
	iii) Type of washers used	FLAT AND SPRING
	iv) Materials of braids	NOT APPLICABLE.
	v) Temperature rise when carrying rated current at 50 deg.c ambient (deg.c)	WITHIN LIMITS OF IS 5561.
	vi) Weight of each type of clamp (kg).	APP 1 KG FOR SINGLE & 2 KG FOR TWIN CONNECTOR

APPROVED

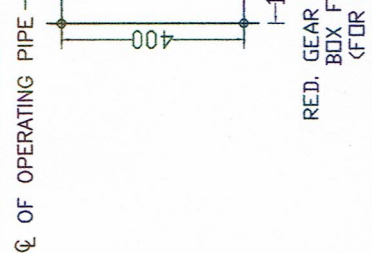
  
Chief Engineer / Construction-  
APTRANSCO, Vidyut Soudha,  
Hyderabad - 500 082.  $\frac{34}{48}$



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BASE CHANNEL FIXING DETAILS



Ø OF OPERATING PIPE

RED. GEAR MANUAL OPERATING BOX FIXING DETAILS (FOR MAIN & EARTH)

- NOTE:
1. ALL DIMENSIONS ARE IN MM
  2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED.
  3. ALL HDE COPPER CONTACT POINTS ARE SILVER PLATED (15 MICRON MIN)
  4. THE MAIN ROTATING POST HAS TWO NOS OF BALL BEARING.
  5. ALL G.I. PIPES ARE OF 'B' CLASS
  6. MANUFACTURING TOLERANCES:
    - I) UPTO 50MM - ±3%
    - II) 51MM TO 100MM - ±2%
    - III) 101MM TO 300MM - ±1%
    - IV) ABOVE 300MM - ±0.5%
  7. WEIGHT OF METALLIC (APPROX) - 464KGS

S.R.	PART LIST	QTY
1	FIXED CONTACT ASSEMBLY	6 NOS.
2	MOVING CONTACT ASSEMBLY	3 NOS.
3	INSULATOR STACK (NOT IN SCOPE)	9 NOS.
4	TANDEM PIPE (NB 32 G.I. PIPE) CL-B, 7 MTR	2 NOS.
5	ROTATING STOOL POST	3 NOS.
6	ELEVATOR PLATE	6 NOS.
7	BASE CHANNEL (125X65)	3 NOS.
8	OPERATING PIPE (NB 50 G.I. PIPE)	1 NO.
9	MAIN OPERATING MECHANISM BOX (RED. GEAR)	1 NO.
10	E/S FIXED CONTACT ASSEMBLY	3 NOS.
11	E/S MOVING CONTACT ASSEMBLY	3 NOS.
12	E/S TANDEM PIPE (32 NB G.I. PIPE)	1 NO.
13	MECHANICAL INTERLOCK	1 NO.
14	E/S TOP OPERATING MECHANISM	1 NO.
15	E/S OPERATING PIPE (50 NB G.I. PIPE)	1 NO.
16	E/S OPERATING MECH. BOX (RED. GEAR)	1 NO.

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

**TRITECH CORPORATION**

G.A. DRAWING OF  
145KV / 800/1600AMP H.D.B.  
ISOLATOR WITH EARTH SWITCH  
(ON APTRANSCO STRUCTURE)

NAME	SIGN	DATE	TITLE
KUSHAL	KPD	10.12.15	
CHD	P.SHELAR	10.12.15	
APPD	P.SHELAR	10.12.15	

DWG. NO : 16163001AP\_R2

SIZE A4  
SHEET 1/6

**APPROVED**

*Signature*

Chief Engineer / Construction -  
APTRANSCO, Vidyut Soudha, 3<sup>rd</sup> floor  
Hyderabad - 500 082.

REV NO	DATE	DESCRIPTION
R2	22.02.16	REVISED AS PER APTRANSCO COMMENTS.
R1	10.12.15	REVISED IN LINE WITH APTRANSCO STRUCTURE.

REV NO	DATE	DESCRIPTION

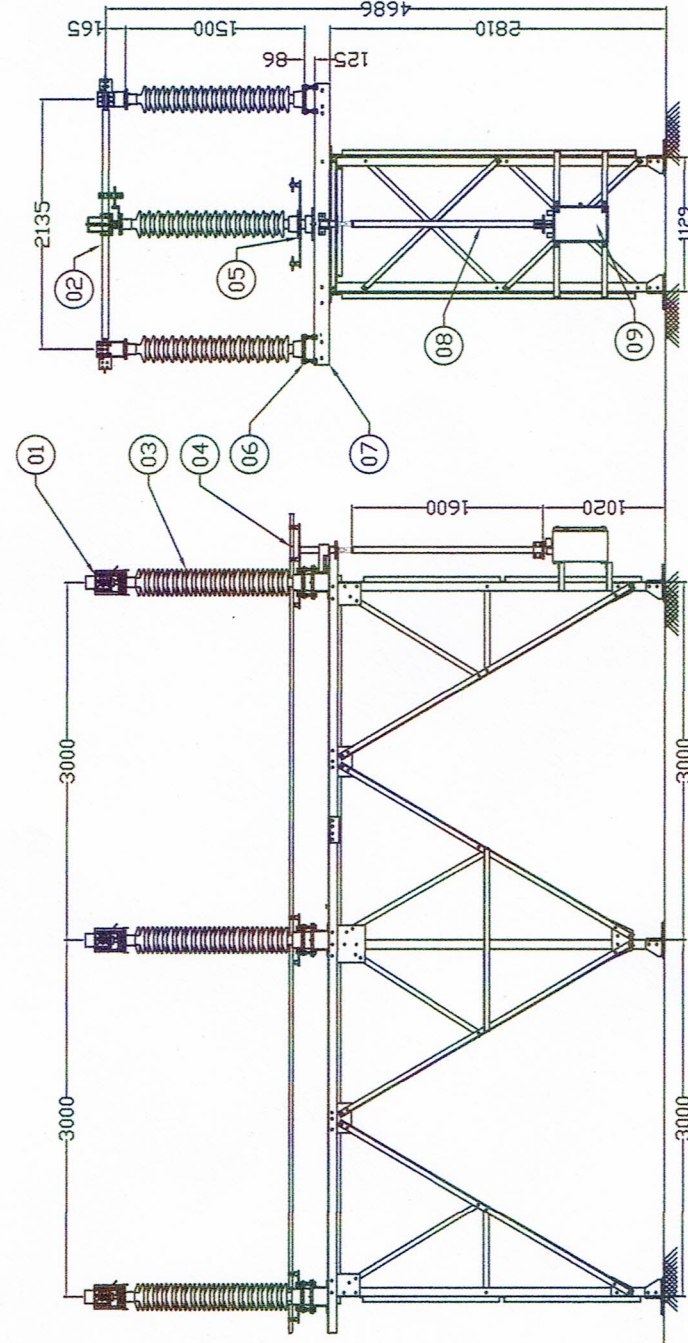
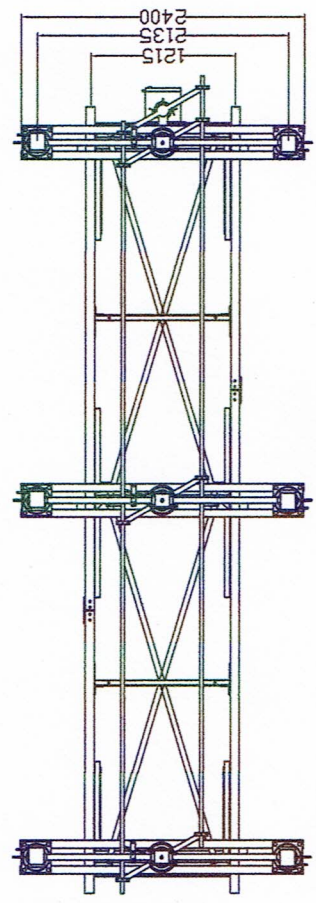


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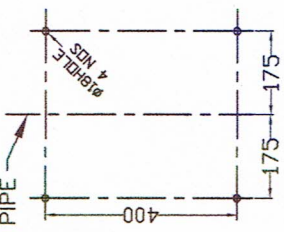
SR.	PART LIST	QTY
1	FIXED CONTACT ASSEMBLY	6 NOS.
2	MOVING CONTACT ASSEMBLY	3 NOS.
3	INSULATOR STACK (NOT IN SCOPE)	9 NOS.
4	TANDEM PIPE (NB 32 G.I. PIPE) CL-B, 7 MTR	2 NOS.
5	ROTATING STOOL POST	3 NOS.
6	ELEVATOR PLATE	6 NOS.
7	BASE CHANNEL (125X65)	3 NOS.
8	OPERATING PIPE (NB 50 G.I. PIPE)	1 NO.
9	MAIN OPERATING MECHANISM BOX (RED.GEAR)	1 NO.

NOTE:

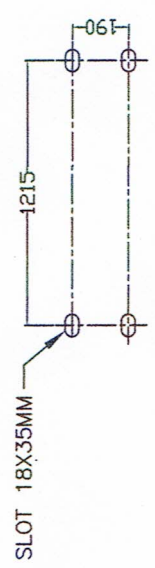
- ALL DIMENSIONS ARE IN MM.
- ALL FERROUS PARTS ARE HOT DIP GALVANIZED.
- ALL HDE COPPER CONTACT POINTS ARE SILVER PLATED (15 MICRON MIN)
- THE MAIN ROTATING POST HAS TWO NOS OF BALL BEARING.
- ALL G.I. PIPES ARE OF 'B' CLASS
- MANUFACTURING TOLERANCES:
  - I) UPTO 50MM - ±3%
  - II) 51MM TO 100MM - ±2%
  - III) 101MM TO 300MM - ±1%
  - IV) ABOVE 300MM - ±0.5%
- WEIGHT OF METALLIC (APPX) - 370KGS



Ø OF OPERATING PIPE



RED. GEAR MANUAL OPERATING BOX FIXING DETAILS (FOR MAIN & EARTH)



BASE CHANNEL FIXING DETAILS

APPROVED  
 Chief Engineer  
 APTRANSCO, Vidyut Soudha,  
 Hyderabad - 500 082

REF NO	DATE	DESCRIPTION	REVISION
R2	25.02.16	REVISED AS PER APTRANSCO COMMENTS.	
RL	10.12.15	REVISED IN LINE WITH APTRANSCO STRUCTURE.	

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

**TRITECH CORPORATION**

G.A. DRAWING OF  
 145KV / 800/1600AMP H.D.B.  
 ISOLATOR WITHOUT EARTH SWITCH  
 (ON APTRANSCO STRUCTURE)

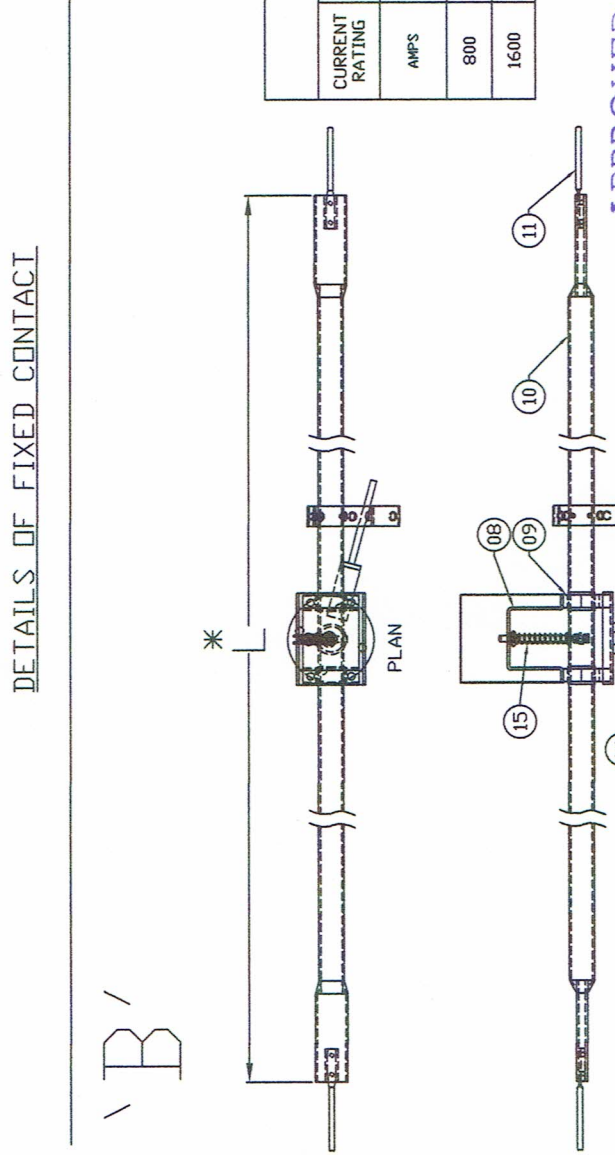
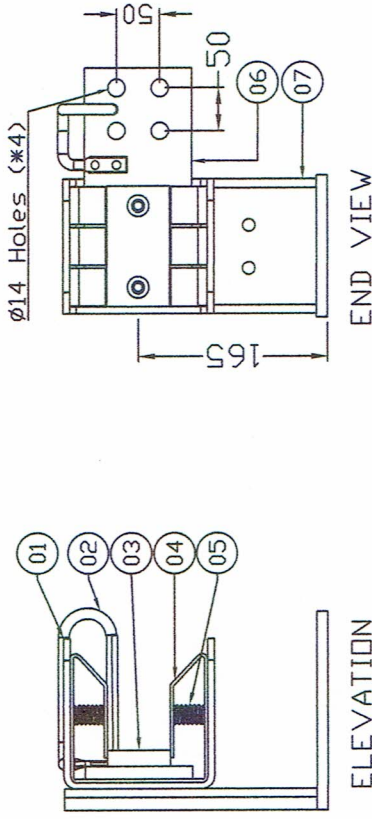
NAME	SIGN	DATE	TITLE
KUSHAL	KPS	10.12.15	
P.SHEKHAR	PPS	10.12.15	
P.SHEKHAR	PPS	10.12.15	

DRWG. NO: I6164001AP\_R2

SIZE: A4  
 SHEET: 2/6



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SR.	PART LIST
1	FC C BRACKET / RAINHOOD
2	FC ARCING HORN
3	SPACER
4	FC SPRINGS (SS)
5	FC M CONTACT
6	TERMINAL PAD (AL.)
7	SUPPORTING CHANNEL
8	MC CANDOPY
9	MC SUPPORTING BLOCK (AL.)
10	MC COPPER TUBE HDEC
11	MC ARCING HORN
12	CLAMP FOR TURN & TWIST
13	MC BASE PLATE FOR TURN & TWIST
14	BEARING HOUSING
15	MC SPRING (SS)

**NOTE:**

1. ALL DIMENSIONS ARE IN MM.
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED.
3. ALL HDE COPPER CONTACT POINTS ARE SILVER PLATED.
4. TOLERANCE AS PER G.A. DRAWING.
5. FOR CONTACT DETAILS FIX CONTACT 'A' & MOVING CONTACT 'B' DETAILS REFER TABLE ANNEXURE 1
6. MOVING CONTACT LENGTH AND FIX CONTACT WILL VARY AS PER FIX CONTACT PAIRS REQUIRED AS PER ANNEXURE 1.

**ANNEXURE 1**

CURRENT RATING	FIXED CONTACT (A)			MOVING CONTACT (B)			TERMINAL PAD			
	SIZE MMxMM	PAIRS NO	AREA SQMM	CL LENGTH MM	ID MM	DD MM		AREA SQMM	CURRENT DENSITY A/SQMM	SIZE MMxMM
800	35X3.7	2	518	1.5400	38	30	2193	427	1.8700	100X10 AL.
1600	35X4.8	3	1008	1.5900	38	19	2231	851	1.8800	100X20 AL.

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

**TRITECH CORPORATION**

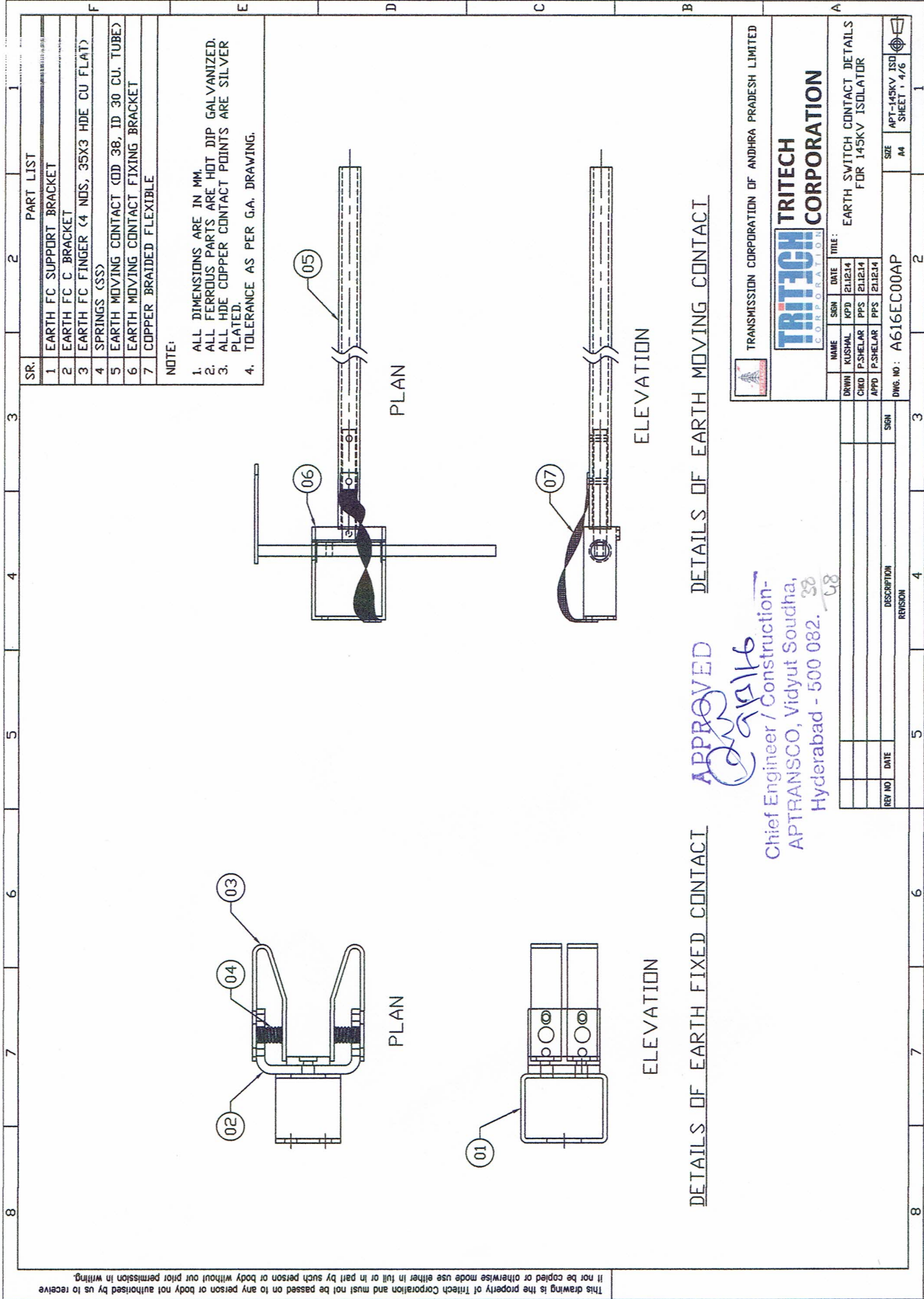
DRWN: KUSHAL KPD 10.12.15  
 CHKD: P.SHELAR PPS 10.12.15  
 APPD: P.SHELAR PPS 10.12.15

NAME: SGN DATE: 10.12.15  
 TITLE: MAIN CONTACTS DETAILS  
 FOR 145KV 800/1600AMP ISOLATOR

DRWG NO: A616MC00AP\_R1

SIZE: A4  
 SHEET: 3/6





**PART LIST**

SR.	DESCRIPTION
1	EARTH FC SUPPORT BRACKET
2	EARTH FC C BRACKET
3	EARTH FC FINGER (4 NOS, 35X3 HDE CU FLAT)
4	SPRINGS (SS)
5	EARTH MOVING CONTACT (OD 38, ID 30 CU. TUBE)
6	EARTH MOVING CONTACT FIXING BRACKET
7	COPPER BRAIDED FLEXIBLE

**NOTE:**

1. ALL DIMENSIONS ARE IN MM.
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED.
3. ALL HDE COPPER CONTACT POINTS ARE SILVER PLATED.
4. TOLERANCE AS PER G.A. DRAWING.

APPROVED

*[Signature]*  
 Chief Engineer / Construction-  
 APTRANSCO, Vidyut Soudha,  
 Hyderabad - 500 082. 38 48

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

**TRITECH CORPORATION**

NAME: KUSHAL KPD DATE: 21.12.14  
 DRWN: P.S.SHEKHAR PPS DATE: 21.12.14  
 APPD: P.S.SHEKHAR PPS DATE: 21.12.14

TITLE: EARTH SWITCH CONTACT DETAILS FOR 145KV ISOLATOR

DWG. NO.: A616EC00AP

SIZE: A4

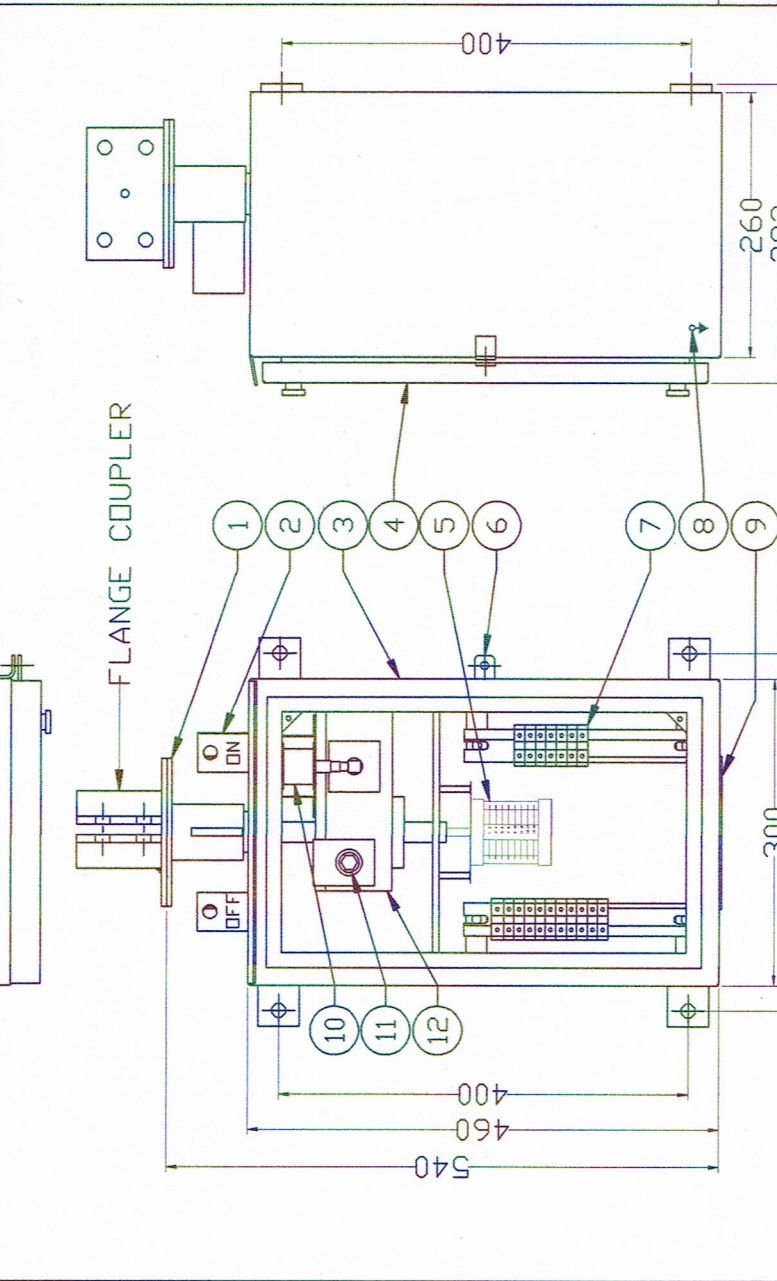
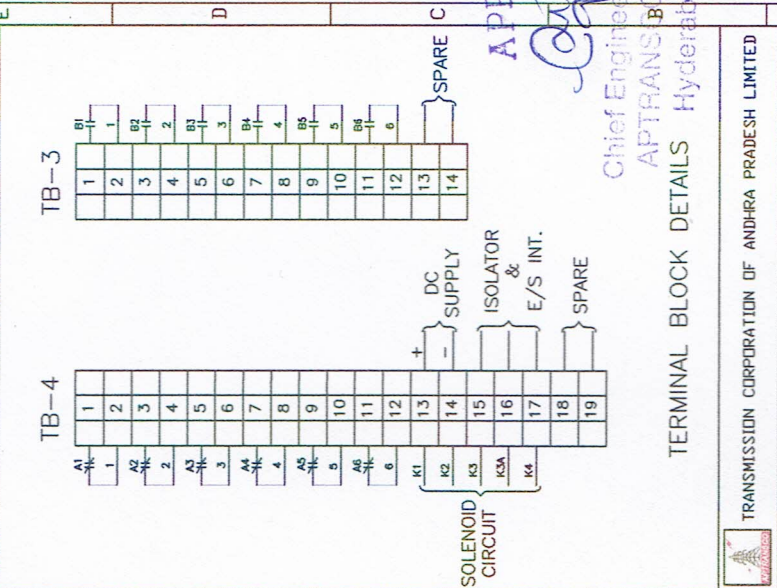
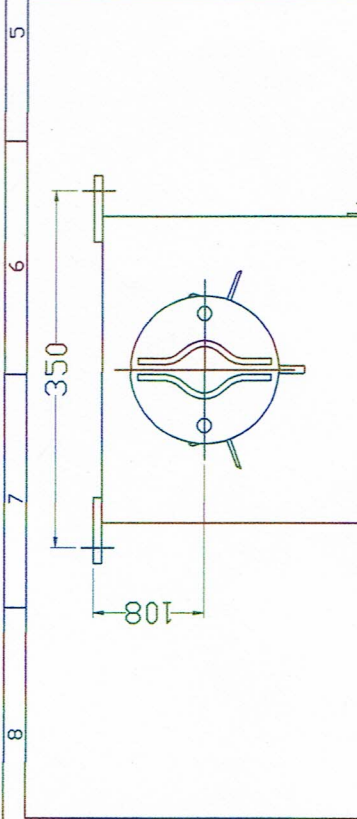
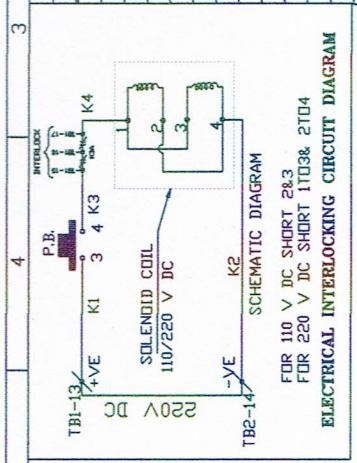
APT-145KV ISD SHEET 1/4/6

REV. NO.	DATE	DESCRIPTION	REVISION

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SR.	DESCRIPTION
1	TOP FLANGE
2	ON-OFF STOPPER
3	BOX (12 S.W.G., 264MM THK.)
4	DOOR WITH GASKET NEOPRENE 3MM THK.
5	AUX SWITCH (6ND + 6NC)
6	PROVISION FOR PADLOCK (WITHOUT LOCK)
7	TERMINAL CONNECTOR
8	EARTHING TERMINAL
9	REMOVABLE GLAND PLATE
10	SOLENOID COIL
11	PUSH BUTTON
12	REDUCTION GEARBOX



NAME		DATE		TITLE	
DRWN	KUSHAL	KPD	21.10.14	G.A. DRAWING OF REDUCTION GEAR MANUAL OPERATING BOX FOR MAIN	
CHD					
APPD					
DWG. NO. : BRD08RG0AP				SIZE	A4
				APT-145KV ISO SHEET 1/5/6	

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED	
<b>TRITECH CORPORATION</b>	
Chief Engineer / Cons APTRANS, B.D, Vidyut Hyderabad - 500	
TERMINAL BLOCK DETAILS	
APPROVE	

**NOTE:**

- ALL DIMENSIONS ARE IN MM.
- BOX POWDER COATED AS PER IS:5
- THICKNESS OF POWDER COATING (MINIMUM)=80 MICRON
- POWDER COATING SHADE OF BOX= LIGHT GRAY STRUCTURE (LG 631)
- REMOVABLE CABLE GLAND PLATE
- MANUFACTURING TOLERANCES: ±5%
- DEGREE OF PROTECTION : IP55

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**TRANSMISSION CORPORATION OF ANDHRA PRADESH LTD .  
GUARANTEED TECHNICAL PARTICULARS  
GTPS FOR 245KV,800/1600/2000 AMPS ISOLATOR.**

Sr. No.	Description	Particulars		
1)	Type/Installation	DBCR, OUTDOOR TYPE		
2)	Manufacturer's Name and Country of Manufacture	TRITECH CORPORATION, INDIA		
3)	Standards according to which the isolators are manufactured	IS 9921, IEC129		
4)	Maximum design voltage at which the isolator can operate (kV)	245 KV		
5)	Frequency (Hz)	50 HZ		
6)	Rated Voltage (kV)	220 KV		
7)	Maximum current that can be safely interrupted by the isolator			
a)	Inductive (A & % PF)	0.7 A@0.15 PF		
b)	Capacitive (A & % PF)	0.7A@0.15PF		
8)	Continuous current rating Nominal (Amps) Under site conditions (Amps)	800/1600/2000 AMPS		
9)	Rated short time current	MAIN & EARTH		
a)	For 3 seconds (kA rms)	40 KA RMS		
b)	For 1 second (kA rms)	-		
c)	Rated peak short time current (kVp)	100 KAP		
10)	Current density at the minimum cross-section of	<b>800</b>	<b>1600</b>	<b>2000</b>
a)	Moving blade (Amps/Sq.mm)	2.5	2.5	2.5
b)	Terminal pad	AL 1.0	AL 1.0	AL 1.0
c)	Contacts	2	2	2
d)	Terminal Connector	1	1	1.25
11)	Maximum Temp. rise of current carrying parts when carrying rated current continuously (deg.c)	WITHIN LIMITS OF IS/IEC		
12)	Derating factor for specified site conditions	UNITY		
13)	Insulation Levels			
a)	Impulse withstand voltage (kV peak) Phase to Earth & Isolating Distance	1050 KVP/1200 KVP		
b)	Switching surge withstand voltage (kV peak) Phase to Earth & Isolating Distance	NOT APPLICABLE		
c)	Power Frequency withstand voltage (kV rms) Phase to Earth & Across isolating Distance	460/530 KV RMS FOR 1MINUTE		

Tritech Corporation, Gajra Udyog Ware House Complex, OPP. Nirmal Ashram Gurudwara  
Rajur Bahula, Mumbai- Agra Highway, Nashik-422010. E- Mail : [tritech.corp@gmail.com](mailto:tritech.corp@gmail.com)  
[Satyakrishna1957@gmail.com](mailto:Satyakrishna1957@gmail.com). MOB : 9441210508.



14)	Minimum clearance in air:	
a)	Between poles (mm)	4000MM FOR PHASE SPACING OF 4500 MM.
b)	Between live parts and earth (mm)	2300MM
c)	Between live parts when switch is open:	
	i) On the same pole (mm)	3000MM FOR POLE SPACING OF 3200MM.
	ii) Between adjacent poles (mm)	4000MM
15)	Rated mechanical terminal load	
a)	Load along the terminal connector side (kg.)	800N
b)	Load across the terminal connector side (kg.)	270N
16)	Torque required to operate the switch in Kgm (Not specified)	MAIN-45KGM,EARTH-45 KGM
17)	Contact Zone	
a)	Horizontal deflection (mm)	NOT APPLICABLE FOR DOUBLE BREAK ISO.
b)	Vertical deflection (mm)	-----D0-----
c)	Total amplitude of longitudinal movement w.r.t. conductor supporting fixed contact (mm)	-----D0-----
18)	Design and Construction	
a)	No. of insulators per pole	THREE STACKS/POLE
b)	No. of breaks per pole	MAIN-2,ES-SINGLE
c)	Type of closing /Opening mechanism (Horizontal/Vertical break straight etc.)	MAIN-HORIZONTAL,EARTH SW-VERTICAL BREAK
d)	Contacts:	<b>800</b> <b>1600</b> <b>2000</b> <b>E/S</b>
	i) Material and grade	CU   CU   CU   CU
	ii) Cross-sectional area (mm)	518   1008   1316   630
e)	Moving Blades:	<b>800</b> <b>1600</b> <b>2000</b> <b>E/S</b>
	i) Material and grade	CU   CU   CU   CU
	ii) Cross-sectional area (mm)	643   830   1056   643
f)	Contact Support:	
	i) Material and size of channel/block	MS HDG, 4MM
	ii) Material and size of plate	MS HDG., 6MM
g)	Rain hood - Material grade and size	MS HDG , 5MM
h)	Turn and twist mechanism	
	i) Material and size of clamps	MS HDG, 6MM
	ii) Material size of springs	SS, 2.6 MM DIA
	iii) Whether springs are encased	YES
i)	Nuts and Bolts:	
	i) Size, material and grade in live parts	LESS THAN 3/8" SS, ABOVE 5/8"HDG
	ii) Size, material and grade in other parts	3/8" ABOVE HDG
j)	Insulator base plate Material and size of plate below insulators	MS HDG-10MM
k)	Bearings:	
	i) Material and size of housing	AL ALLOY, SUITABLE FOR 50 DIA SHAFT.



	ii) No. of bearings, location and size	2, BELOW ROTATING INSULATOR STACK.	
l)	Tandem pipe:		
	i) Size, length, class and no. of pipes	32 ID,CL B,GI PIPE-10M	
	ii) Size of shackle, screw	-	
	iii) No. of bearings/bush and its material and size	BRASS BUSH.	
m)	Type of interlock (Electromagnet)	ELECTRO MECHANICAL.	
n)	Down pipe size, length and class (40NB)	50 NB,CL B,GI PIPE	
o)	Type of universal/swivel joint		
	i) Between bearing and down pipe	UNIVERSAL.	
	ii) Between down pipe and operating mechanism	VERNIER TYPE	
p)	Operating mechanism:	<b>MAIN</b>	<b>EARTH</b>
		MOTORIZED	RED.GEAR
	i) Control cabinet		
	Material and thickness (12 Gauge - 2.64mm) of Steel or 10 mm thick Aluminium or Casting.	2.64 MM	
	Degree of protection	IP 55	
	Type size and No. of cable glands	CONTRACTORS SCOPE	
	Whether removable gland plate provided	YES	
q)	Base:		
	i) Size of steel sections used	150X75 MM	
	ii) Overall size	150X300X3600 MM	
	iii) Total weight	140 KG /POLE	
r)	Terminal Connectors:		
	i) Clamp Body:		
	Alloy Composition	AL ALLOY TO IS 617	
	Plating if any	NOT APPLICABLE	
	Area at air cross -section	1600 SQ MM	
	ii) Bolts and nuts size		
	Alloy Composition	MS HDG AS PER REL IS STD.	
	Tensile strength	-----DO-----	
	iii) Type of washers used	FLAT AND SPRING	
	iv) Materials of braids	NOT APPLICABLE.	
	v) Temperature rise when carrying rated current at 50 deg.c ambient (deg.c)	WITHIN LIMITS OF IS 5561.	
	vi) Weight of each type of clamp (kg).	APP 1 KG FOR SINGLE & 2 KG FOR TWIN CONNECTOR	

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*[Handwritten Signature]*

Chief Engineer / Construction-  
APTRANSCO, Vidyut Soudha,  
Hyderabad - 500 082.

41  
98



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SR.	PART LIST	QTY
1	FIXED CONTACT ASSEMBLY	6 NOS.
2	MOVING CONTACT ASSEMBLY	3 NOS.
3	INSULATOR STACK	9 NOS.
4	TANDEM PIPE (NB 32 G.I. PIPE) 10 MTR	2 NOS.
5	ROTATING INSULATOR POST	3 NOS.
6	ELEVATOR PLATE	6 NOS.
7	BASE CHANNEL (150X75)	3 NOS.
8	OPERATING PIPE (NB 50 G.I. PIPE)	1 NO.
9	MAIN OPERATING MECHANISM BOX (MOTOR)	1 NO.
10	4TH BASE FOR MAIN IOP SUPPORT	1 NO.
11	E/S FIXED CONTACT ASSEMBLY	3 NOS.
12	E/S MOVING CONTACT ASSEMBLY	3 NOS.
13	E/S TANDEM PIPE (32 NB G.I. PIPE)	1 NO.
14	MECHANICAL INTERLOCK	1 NO.
15	E/S LINK OPERATING MECHANISM	1 NO.
16	E/S OPERATING PIPE (50 NB G.I. PIPE)	1 NO.
17	E/S OPERATING MECH. BOX (RED. GEAR)	1 NO.

**NOTE:**

1. ALL DIMENSIONS ARE IN MM.
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED.
3. ALL HDE COPPER CONTACT POINTS ARE SILVER PLATED (15 MICRON MIN).
4. THE MAIN ROTATING POST HAS TWO NOS OF BALL BEARING.
5. ALL G.I. PIPES ARE OF 'B' CLASS MANUFACTURING TOLERANCES.
6. D UPTD 50MM - ±3%  
ID 101MM TO 300MM - ±2%  
IV. ABOVE 300MM - ±0.5%
7. WEIGHT OF METALLIC APPX - 760 KGS
8. STRUCTURE & FOUNDATION BOLTS AND INSULATORS ARE NOT IN TRITECH SCOPE OF SUPPLY.
9. INSULATOR HAVING 225MM BOTTOM P.C.D. & 127MM TOP P.C.D.
10. FOUNDATION PLAN AS PER APTRANSCO DRAWING, REF. DWG NO. STD/DVG/SS '220KV ISD' APPROVAL NO. 492.

**APPROVED**

*Signature*  
Chief Engineer / Construction  
APTRANSCO, Viduthalancheru

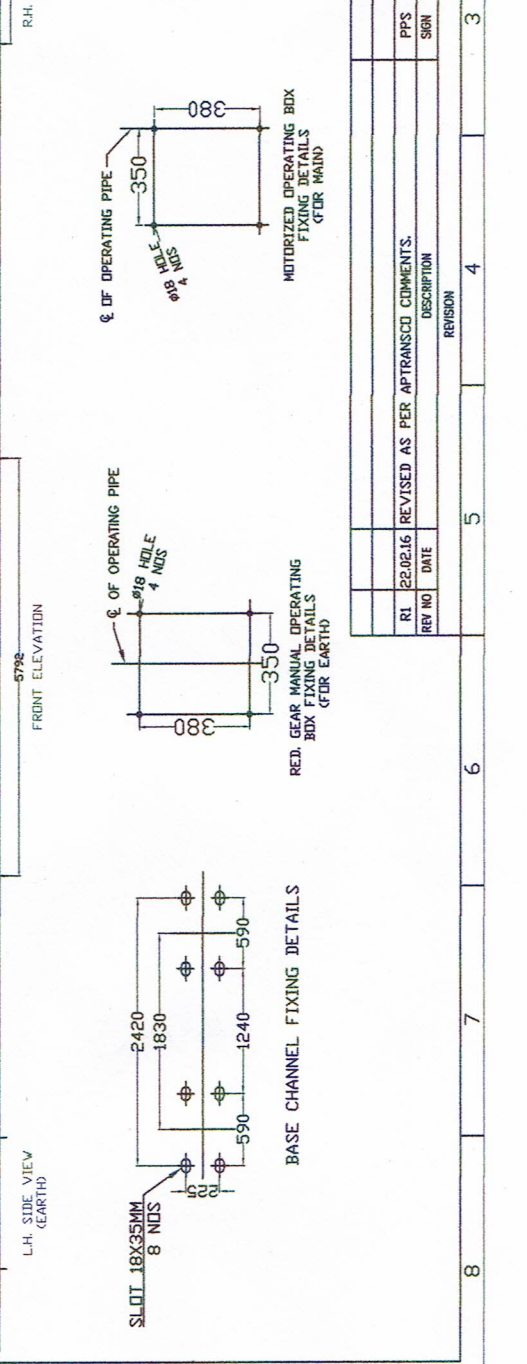
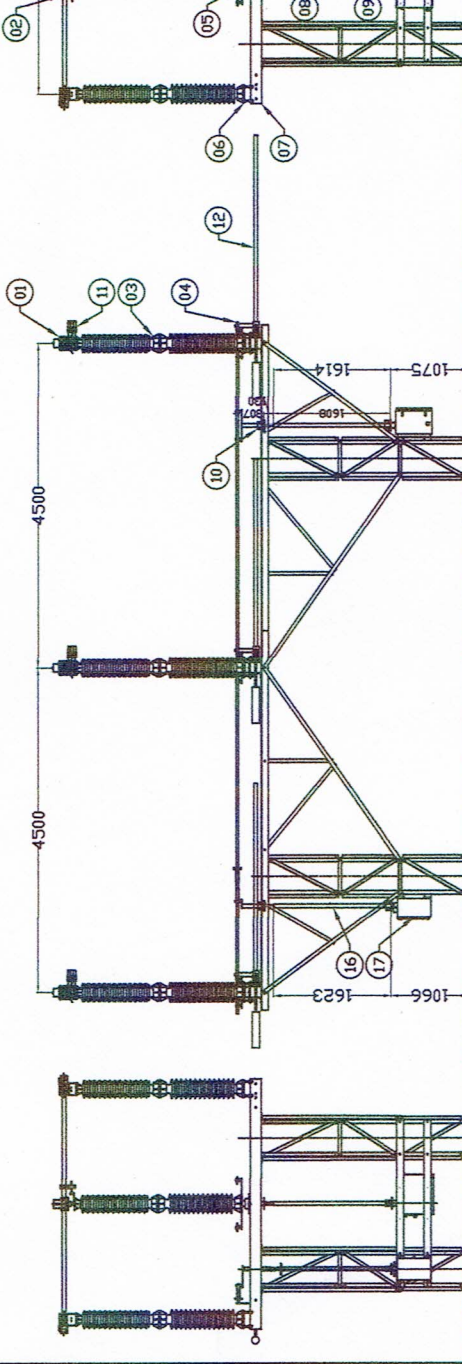
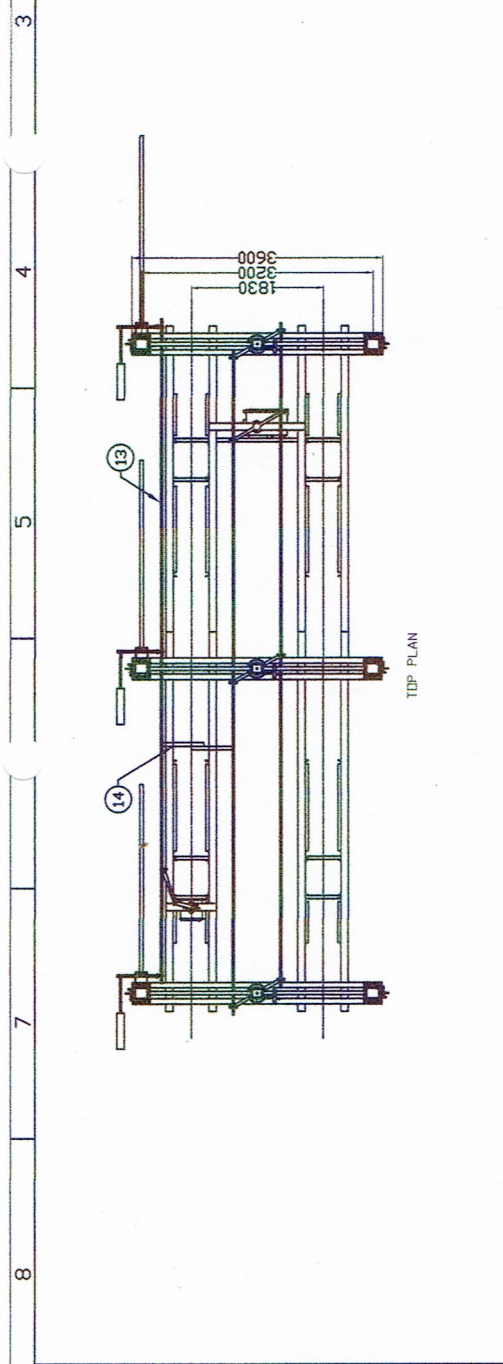
**TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED**

**TRITECH CORPORATION**

G.A. DRAWING OF  
245KV 800/1600/2000AMP H.D.B.  
ISOLATOR WITH EARTH SWITCH  
(ON APTRANSCO STRUCTURE)

NAME	SIGN	DATE	TITLE
DRWH KUSHAL KPD		10.12.15	
CHKD P.SHELAR PPS		10.12.15	
APPD P.SHELAR PPS		10.12.15	

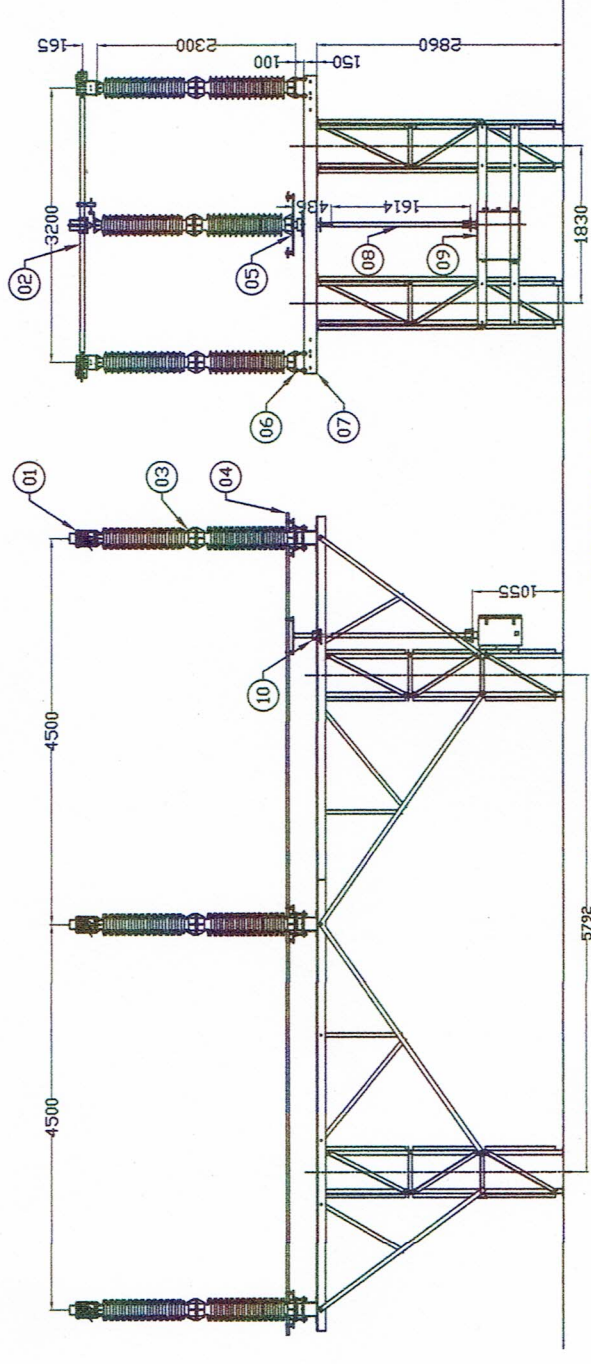
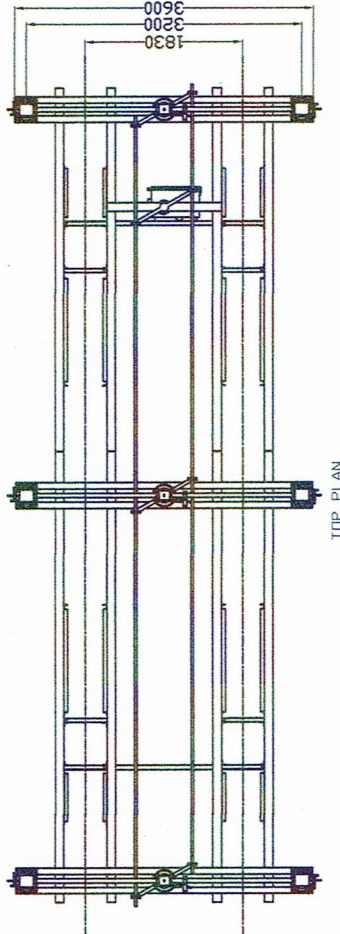
DWG. NO : I7203002AP\_R1  
SIZE A4  
APT - 245KV ISO  
SHEET : 1/7



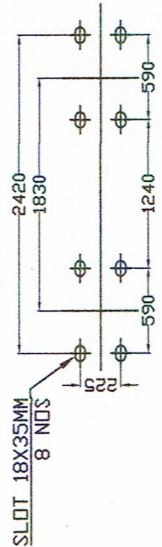
REV NO	DATE	DESCRIPTION	REVISION
R1	22.02.16	REVISED AS PER APTRANSCO COMMENTS.	



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R.H. SIDE VIEW (MAINS)



APPROVED

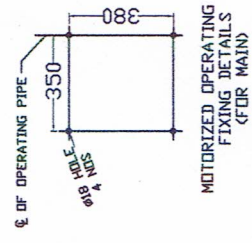
*Carsh*

Chief Engineer / Construction-  
APTRANSCO, Vidyut Soudha, 4/3, 4/6  
Hyderabad - 500 082.

SR.	PART LIST	QTY
1	FIXED CONTACT ASSEMBLY	6 NOS.
2	MOVING CONTACT ASSEMBLY	3 NOS.
3	INSULATOR STACK (NOT IN SCOPE)	9 NOS.
4	TANDEM PIPE (NB 32 G.I. PIPE) 10 MTR	2 NOS.
5	ROTATING INSULATOR POST	3 NOS.
6	ELEVATOR PLATE	6 NOS.
7	BASE CHANNEL (150X75)	3 NOS.
8	OPERATING PIPE (NB 50 G.I. PIPE)	1 NO.
9	OPERATING MECHANISM BOX (MOTOR)	1 NO.
10	4TH BASE FOR MAIN DOP SUPPORT	1 NO.

NOTE:

1. ALL DIMENSIONS ARE IN MM.
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED.
3. ALL HDE COPPER CONTACT POINTS ARE SILVER PLATED (15 MICRON MIN)
4. THE MAIN ROTATING POST HAS TWO NOS OF BALL BEARING.
5. ALL G.I. PIPES ARE OF 'B' CLASS
6. MANUFACTURING TOLERANCES:
  - I) UP TO 50MM - ±3%
  - II) 51MM TO 100MM - ±2%
  - III) 101MM TO 300MM - ±1%
  - IV) ABOVE 300MM - ±0.5%
7. WEIGHT OF METALLIC (APPRX) - 760 KGS
8. STRUCTURE NOT IN TRITECH SCOPE OF SUPPLY



TRANSMISSION CORPORATION OF  
ANDHRA PRADESH LIMITED

**TRITECH CORPORATION**

G.A. DRAWING OF  
245KV 800/1600/2000AMP H.D.B.  
ISOLATOR WITHOUT EARTH SWITCH  
(ON APTRANSCO STRUCTURE)

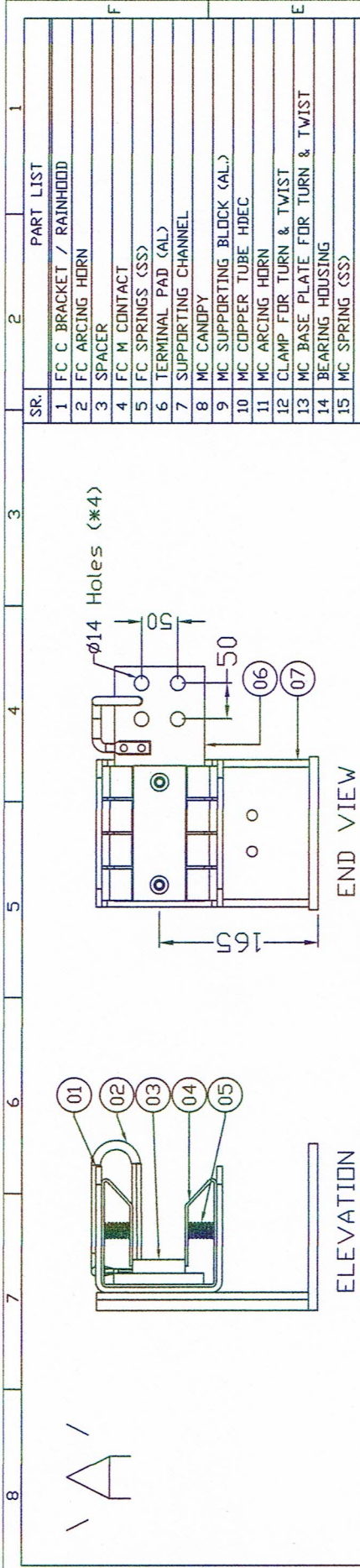
NAME	DATE	TITLE
DRWN: KUSHAL	KPD 10.12.15	
CHKD: P.SHELAR	PPS 10.12.15	
APPD: P.SHELAR	PPS 10.12.15	

DWG. NO: I7204002AP\_R1

SIZE: A4  
SHEET: 2/7

REV NO	DATE	DESCRIPTION
R1	22.02.16	REVISED AS PER APTRANSCO COMMENTS.





**ANNEXURE 1**

CURRENT RATING	FIXED CONTACT (A)			MOVING CONTACT (B)			TERMINAL PAD
	SIZE MMXMM	PAIRS NO	CURRENT DENSITY A/SDMM	ID MM	AREA SQMM	CURRENT DENSITY A/SDMM	
800	35X3.7	2	518	50	643	1.8700	100X10 AL.
1600	35X4.8	3	1008	50	830	1.9300	100X20 AL.
2000	35X4.7	4	1316	50	1056	1.8900	100X25 AL.

**NOTE:**

1. ALL DIMENSIONS ARE IN MM.
2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED.
3. ALL HIDE COPPER CONTACT POINTS ARE SILVER PLATED.
4. TOLERANCE AS PER G.A. DRAWING.
5. FOR CONTACT DETAILS FIX CONTACT 'A' & MOVING CONTACT 'B' DETAILS REFER TABLE ANNEXURE 1
6. MOVING CONTACT LENGTH AND FIX CONTACT WILL VARY AS PER FIX CONTACT PAIRS REQUIRED AS PER ANNEXURE 1.

**TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED**

**TRITECH CORPORATION**

**TRITECH CORPORATION**

NAME: KUSHAL KPD  
SIGN: PPS  
DATE: 21.12.14

CHKD: P.SHELAR  
APPD: PPS  
DATE: 21.12.14

TITLE: MAIN CONTACTS DETAILS FOR 245KV 800/1600/2000AMP ISOLATOR

DWG. NO: A720MC00AP\_R1

SIZE: A4  
SHEET: 3/7

**APPROVED**

*[Signature]*  
Chief Engineer / Construction-  
APTRANSCO, Vidyut Soudha,  
Hyderabad - 500 002.

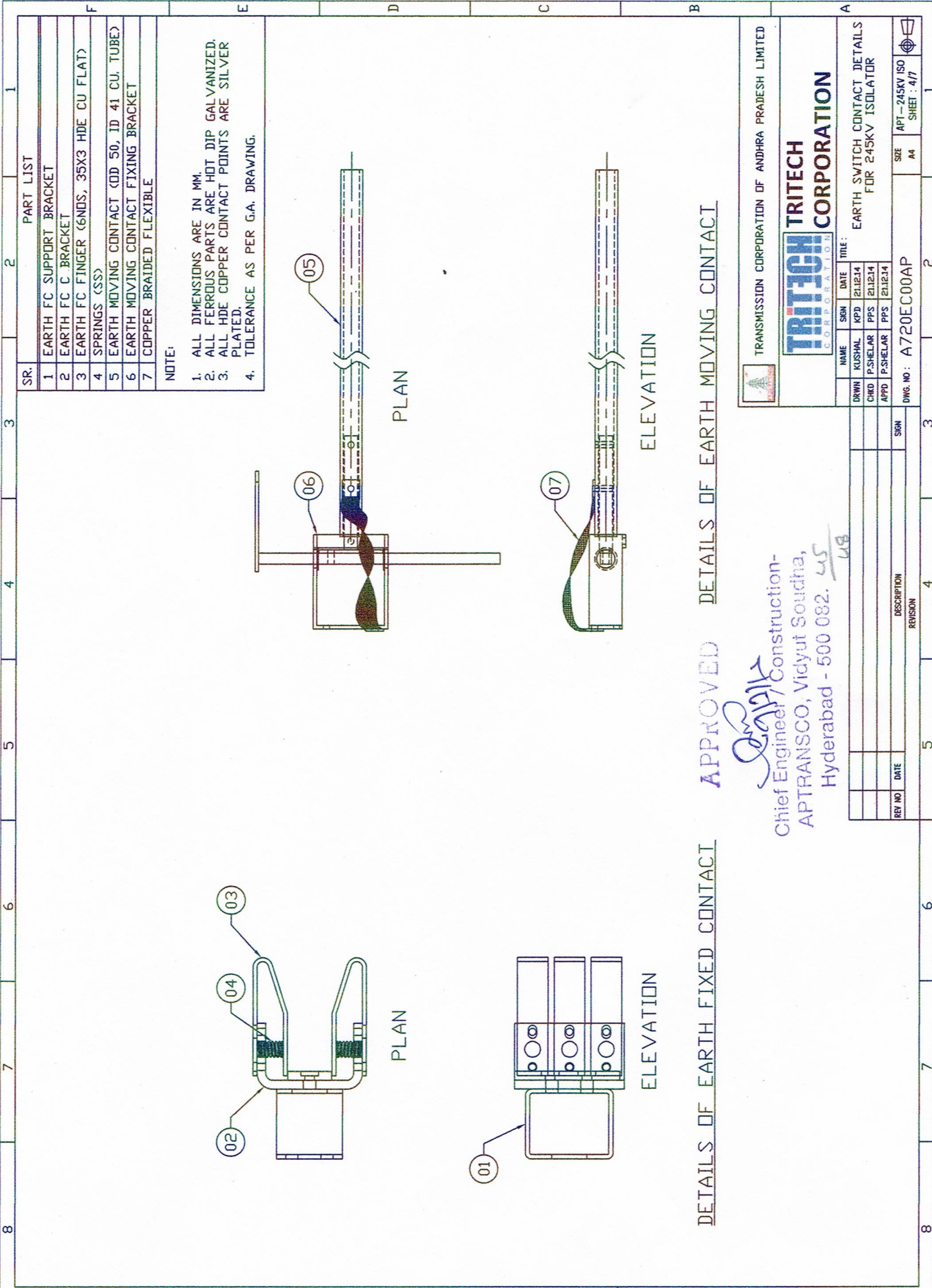
REVISION

REV NO	DATE	DESCRIPTION
R1	10.12.15	REVISED AS PER COMMENTS.

11  
10  
12  
13  
14  
15



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SR.	PART LIST
1	EARTH FC SUPPORT BRACKET
2	EARTH FC C BRACKET
3	EARTH FC FINGER (6NDS, 35X3 HDE CU FLAT)
4	SPRINGS (SS)
5	EARTH MOVING CONTACT (OD 50, ID 41 CU. TUBE)
6	EARTH MOVING CONTACT FIXING BRACKET
7	COPPER BRAIDED FLEXIBLE

NOTE:  
 1. ALL DIMENSIONS ARE IN MM.  
 2. ALL FERROUS PARTS ARE HOT DIP GALVANIZED.  
 3. ALL HDE COPPER CONTACT POINTS ARE SILVER PLATED.  
 4. TOLERANCE AS PER G.A. DRAWING.

DETAILS OF EARTH FIXED CONTACT

APPROVED

DETAILS OF EARTH MOVING CONTACT

*S. S. S. S.*  
 Chief Engineer/Construction  
 APTRANSCO, Vidyut Soudha,  
 Hyderabad - 500 082. *LS*

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

**TRITECH CORPORATION**

NAME	SIGN	DATE	TITLE
DRWN KUSHAL	KPD	21/12/14	
CHKD P.SHELAR	PPS	21/12/14	
APPD P.SHELAR	PPS	21/12/14	

DRWG. NO : A720EC00AP

SIZE A4

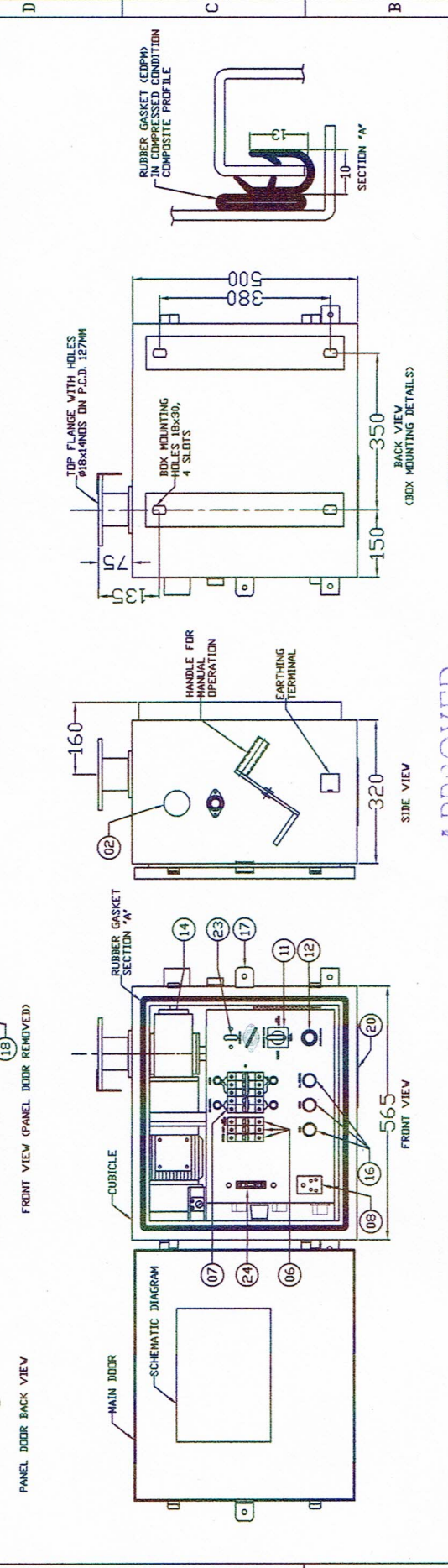
APT - 245KV ISO SHEET : 4/7

REV NO	DATE	DESCRIPTION	REVISION



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Sr.	Part List	Rating	Make	Qty.
1	RUBBER GASKET			01 NO
2	MANUAL OPERATION WINDOW			02 NOS
3	THERMOSTAT	30-85	GIRISH EGO/VELCO DR EQUIVALENT	01 NO
4	DOOR CLIP			02 NOS
5	LAMP HOLDER	6AMP	STRACO/ANCHOR	01 NO
6	MCB FOR LAMP/HEATER/A/C SUPPLY	16AMP	L&T/SCHNEIDER/C&S	03 NOS
7	MCBs		C&S/SCHNEIDER/SIEMENS	02 NOS
8	POWER SOCKET (WITH SWITCH)	1 TO 1.6	STRACO/ANCHOR DR EQUIVALENT	01 NO
9	OVERLOAD RELAY	220V DC	SIEMENS/SPECHER & S.J.H. AREVA/ SCHNEIDER	01 NO
10	OPEN & CLOSE CONTACTORS	6AMP	SIEMENS/SPECHER & S.J.H. AREVA/ SCHNEIDER	02 NOS
11	SELECTOR SWITCH	6AMP	KAYCEE/ SURAJ/ SELECT/ VAISHND/SCI	01 NO
12	PUSH BUTTON (EMERGENCY STOP)	6AMP	SUNKIDY/ AMAR/ SURAJ/ MIHIR/ SCHNEIDER	01 NO
13	PUSH BUTTON (REDUCTION GEAR UNIT)	10AMP	DVN MAKE	01 NO
14	FLAP TO BLOCK MANUAL OPERATION		MURGAN POWER/ SVTRDM/ SHIRKE	01 NO
15	AUXILIARY SWITCH	6AMP	SUNKIDY/ AMAR/ SURAJ/ MIHIR/ SCHNEIDER	03 NOS
16	PUSH BUTTON (OPEN/CLOSE/I/L RELEASE)		VELCO/GIRISH EGO/SAIGURU KRIFA DR	01 NO
17	PROVISION FOR PADLOCK		VELOC/SCHNEIDER/ EQUIVALENT	01 NO
18	HEATER	80 WATTS	VINPAR/ ELEMEX/ JAINSDN/ CONNECTVELL	02 NOS
19	TERMINAL BLOCK		BRISK/ HONEYWELL/ ESSEN/ SCHNEIDER/ ELMEX/ IDEAL/ BRITKO	02 NOS
20	DETACHABLE TYPE CABLE GLAND PLATE		ASABA DR EQUIVALENT	01 NO
21	CAM		L&T/SIEMENS/SCHNEIDER/ASH	01 NO
22	LIMIT SWITCH	10AMP		
23	SOLENOID COIL	110/220V DC		
24	FUSE LINK NEUTRAL			



**APPROVED**

*Dr. K. S. Sridhar*  
Chief Engineer / Construction -  
APTRANSCO, Vidyut Soudha, 6  
Hyderabad - 500 082.

TRANSMISSION CORPORATION OF ANDHRA PRADESH LIMITED

**TRITECH CORPORATION**

NAME	SGN	DATE	TITLE:
DRWN	KUSHAL	KPD	10.12.15
CHKD	P.SHELAR	PPS	10.12.15
APPD	P.SHELAR	PPS	10.12.15

G.A. DRAWING OF  
MOTOR OPERATING MECHANISM BOX

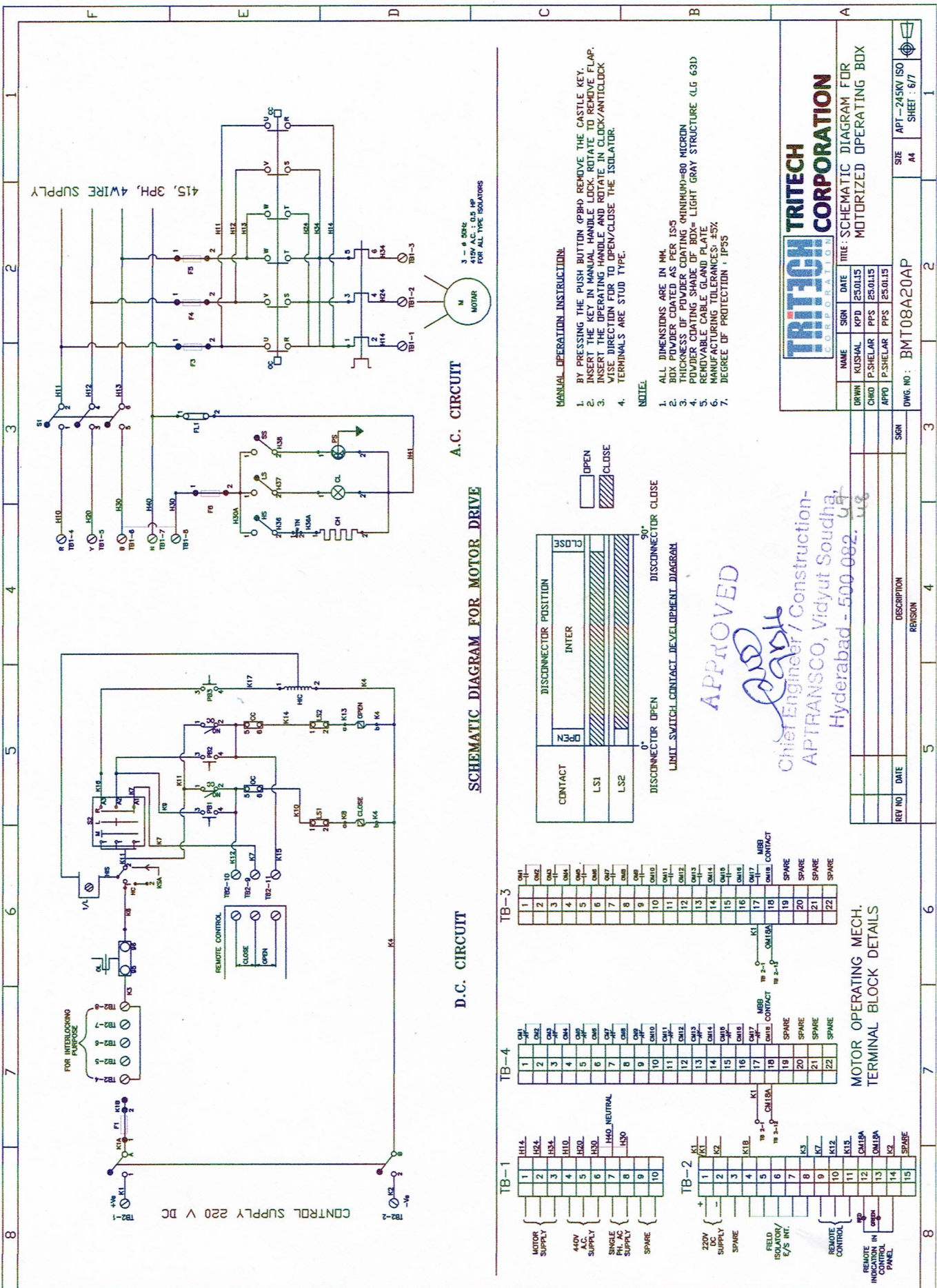
REV NO	DATE	DESCRIPTION	REVISION

DWG. NO : XMT10A20AP  
SIZE A4  
SHEET : 5/7

- NOTE:
- ALL DIMENSIONS ARE IN MM
  - 10% SPARE TERMINALS PROVIDED FOR CUSTOMER USE.
  - WEIGHT OF OPERATING MECH IS 70 KGS. APPROX.
  - DOOR WITH RUBBER GASKET & REMOVABLE GLAND PLATE
  - WITH GASKET NEOPRENE 6X3MM THK
  - AUXILIARY SWITCH WIRE UP TO TERMINAL BLOCKS BY 2.5SQ. MM PVC COPPER FLEXIBLE WIRES.
  - CUBICAL IS COMPLETELY DUST, VERMIN PROOF & DEGREE OF PROTECTION IP 47.
  - MATERIAL IS 12 SVG M.S. SHEET PAINTED WITH COLOUR LIGHT GREY 631.
  - TOLERANCE IS ±3% OVER ALL DIMENSIONS & ±0.5MM ON HOLE DIAMETER
  - MAKE : TRITECH CORPORATION.



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**SCHMATIC DIAGRAM FOR MOTOR DRIVE**

**A.C. CIRCUIT**

**D.C. CIRCUIT**

**MANUAL OPERATION INSTRUCTION**

1. BY PRESSING THE PUSH BUTTON (PB) REMOVE THE CASTLE KEY.
2. INSERT THE KEY IN MANUAL HANDLE LOCK. ROTATE TO REMOVE FLAP.
3. VISE DIRECTION FOR TO OPEN/CLOSE THE ISOLATOR.
4. TERMINALS ARE STUD TYPE.

**NOTE:**

1. ALL DIMENSIONS ARE IN MM.
2. BOX POWDER COATED AS PER IS5
3. THICKNESS OF POWDER COATING (MINIMUM)=80 MICRON
4. POWDER COATING SHADE OF BOX= LIGHT GRAY STRUCTURE (LG 63D)
5. REMOVABLE CABLE GLAND PLATE
6. MANUFACTURING TOLERANCES: ±5%
7. DEGREE OF PROTECTION: IP55



CONTACT	DISCONNECTOR POSITION
LS1	INTER
LS2	CLOSE

DISCONNECTOR OPEN  
DISCONNECTOR CLOSE  
LIMIT SWITCH CONTACT DEVELOPMENT DIAGRAM

**APPROVED**

*Chief Engineer / Construction-  
APTRANSCO, Vidyut Soudha,  
Hyderabad - 500 082. G.T.*



**TITLE: SCHEMATIC DIAGRAM FOR  
MOTORIZED OPERATING BOX**

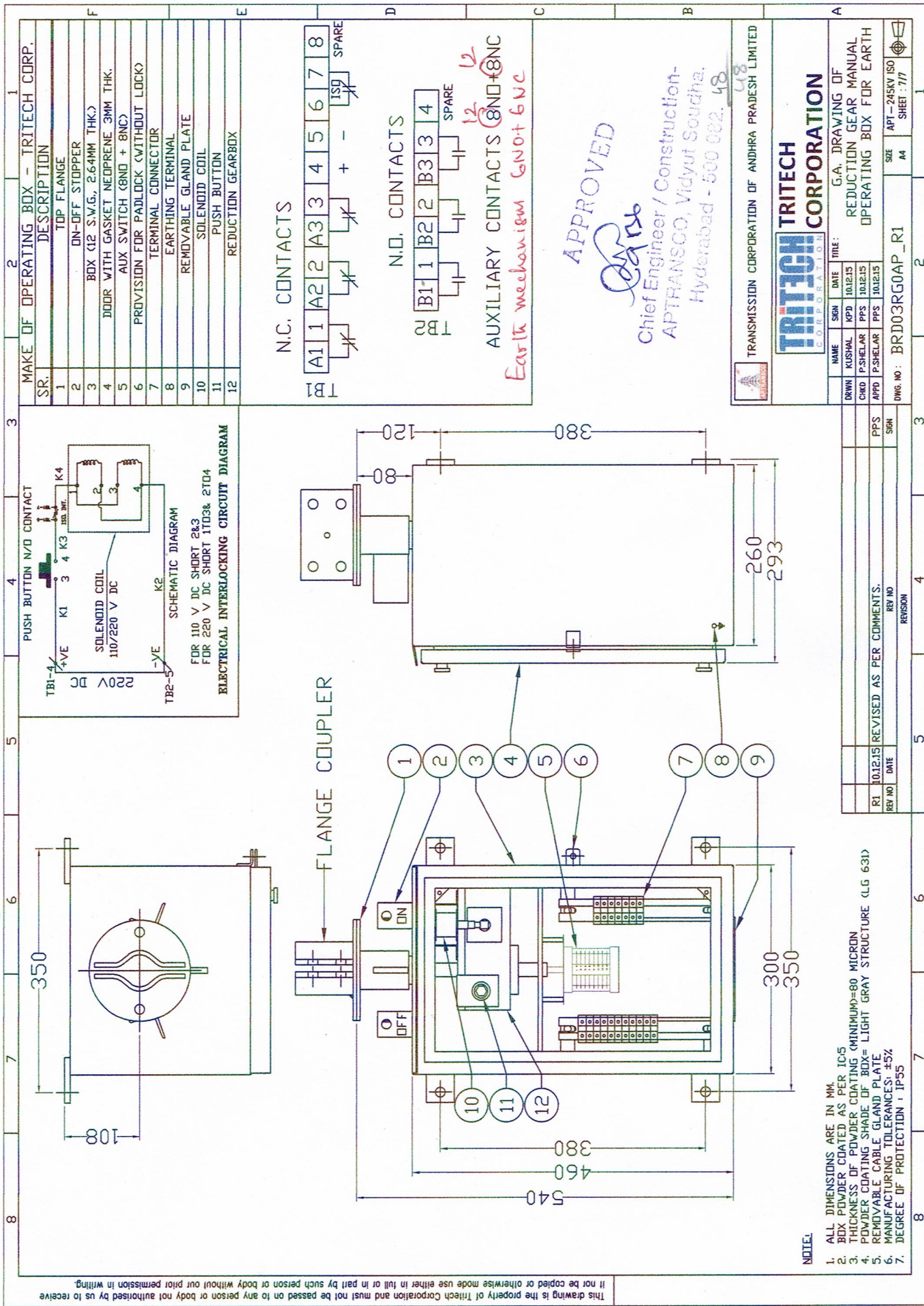
NAME	SIGN	DATE
DRWN	KUSHAL	KPD 25.01.15
CHKD	P.SHEELAR	PPS 25.01.15
APPD	P.SHEELAR	PPS 25.01.15

DWG. NO: BMT08A20AP

REV NO	DATE	DESCRIPTION	REVISION

**MOTOR OPERATING MECH.  
TERMINAL BLOCK DETAILS**





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