

Annexure – A

A detailed technical specifications of power control circuit panel with Auto- Manual Transfer facility are as follows.

1. PANEL FABRICATION SPECIFICATIONS:

The Panels will be made out with 2 mm thick CRCA sheet steel for outer frames and doors & 1.6 mm thick for Barriers sheets and other internal parts, fabricated suitable for floor mounted dust & vermin proof compartmentalized cubicle design, indoor type with fixed modular construction. The Power Distribution Panel will be made suitable for IP 54 enclosure protection clause as per IS. The panel shape and size will be similar to the drawing enclosed along with the enquiry specification. The panel will be pretreated under seven tank process for degreasing, de-rusting and phosphating surface treatment and apply powder coating paints of Siemens Grey Structure paint for both exterior and interior confirming to shade No. RAL 7032 as per your requirement. The panel will be provided with Electrolytic grade tinned copper bus-bars of 1600A. Rating with 2 x 6 x 100 mm for each phase and 1 x 6 x 100 mm for Neutral as specified. Cable entry will be provided at bottom side of the Panel at rear side as per requirement. The Bus-bars will be provided with heat shrinkable PVC sleeves of electric grade with colour coded as per the standard codes. The bus-bars will be supported on TPN bus-bar supports made of DMC material. Necessary ventilating louvers with screens will be provided for all bus-bar chamber covers. The Power Distribution Panel will be provided with 1 No. Earth bus of size 6 x 25 mm copper flat for the entire length of the panel with provision for earth pit connection at both ends.

2. Interlocking provision between two Breakers for Auto Changeover Facility in Distribution Panel:

1. The panel consists of two incoming breakers, one for EB power (Raw Power) supply with rating of 1600 Amps, 4 Pole, 415 V, 50 HZ, EDO, Microprocessor based ACB and one for generator supply with 1000 Amps, 4 Pole, 415 V, 50 HZ, EDO, Microprocessor based ACB.
2. ACB's should have all MPR Releases like Overload, short-circuit and Earth fault protection.

3. Both ACB's should have Shunt release and under voltage coils.
4. Both ACB's should have Earth leakage Relay at input side.
5. Both ACB's should have rated ultimate/service short circuit breaking capacity minimum 50 KA rms.
6. Based on availability of supply one breaker should be ON at a time with priority to EB power.
7. A suitable interlocking and time delay should be provided by interconnecting the under voltage and shunt trip coil electrically to prevent mal-operations like clashing of two power sources.
8. A changeover facility to be provided between two sources automatically as well as Manually.
9. Remote operation facility to be provided along with over load, earth fault, over-voltage and under voltage protection.
10. Provision of an auto changing over facility from EB power supply to generator supply when raw power voltage is lesser/higher than the specified limit for giving quality power.

Breaker Makes: L&T/ Siemens/ ABB/ GE.

Auxiliary Components Specifications.

Qty Description Makes

1 No.	0-500V. Digital Voltmeter,	Conzerv/AE/Elmazer/L&T/Seimens.
1 No.	0- 1600A. Digital Ammeter	Conzerv/AE/Elmazer/L&T/Seimens.
1 No.	Voltmeter Selector Switch 4 Pos.	Salzer/Kaycee/L&T/Seimens.
1 No.	Ammeter Selector Switch 4 Pos.	Salzer/Kaycee/L&T/Seimens.
1 No.	KWH meter	Conzerv/AE/L&T/Seimens.
3 Nos.	1600/5A. (Resin cast) Current Transformers	Kalpa/Powerniks/L&T/Seimens.
1 Set	R, Y, B Indicating Lamps	L&T/Siemens/GE/ABB.
3 Nos.	6A. SP MCBs for controls.	Siemens/L&T/GE/ABB.

Outgoing Switches Specifications.

<u>Qty</u>	<u>Description</u>	<u>Makes</u>
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1 Nos.	1600A. 4P EDO ACB	L&T/Siemens/ABB/GE
1 Nos.	1000A. 4P EDO ACB	L&T/Siemens/ABB/GE
2 Nos.	800A. TPN SDF with HRC fuses	L&T/Siemens/ABB/GE
2 Nos.	630A. TPN SDF with HRC fuses	L&T/Siemens/ABB/GE
1 No.	400A. TPN SDF with HRC fuses	L&T/Siemens/ABB/GE
2 Nos.	250A. TPN SDF with HRC fuses	L&T/Siemens/ABB/GE
2 Nos.	100A. TPN SDF with HRC fuses	L&T/Siemens/ABB/GE
1 No.	63A. MCB DB 12Way	L&T/Siemens/ABB/GE
9 Sets.	R, Y, B indicating lamps	L&T/Siemens/ABB/GE

Note: Both ACB's AND TPN SDF Switches should be same make only.