



Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

An ISO 9001
Company

CAPITAL EQUIPMENT / MATERIALS MANAGEMENT

ENQUIRY	Phone: +91 431 257 70 49 Fax : +91 431 252 07 19 Email : csguna@bheltry.co.in Web : www.bhel.com
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	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
	2620800032	26.05.2008	18.06.2008
You are requested to quote the Enquiry number date and due date in all your correspondences. This is only a request for quotation and not an order			

Item	Description	Quantity	Delivery (Item required at BHEL on)
10	Medium Voltage Distribution Fuse Board 12 way x 16 A per way distribution fuse board as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	4 Nos.	31.08.2008
20	Medium Voltage Distribution Fuse Board 8 way x 32 A per way distribution fuse board as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	6 Nos.	31.08.2008
30	Medium Voltage Distribution Fuse Board 8 way x 63 A per way distribution fuse board as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	11 Nos.	31.08.2008
40	3 Phase DOL Starter as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	75 Nos.	31.08.2008
50	Medium Voltage Switch Disconnecter Isolator - 32 Amps as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	75 Nos.	31.08.2008
60	Medium Voltage Switch Disconnecter Isolator - 63 Amps as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	115 Nos.	31.08.2008



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Item	Description	Quantity	Delivery (Item required at BHEL on)
70	Medium Voltage Switch Disconnect Isolator - 100 Amps as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	25 Nos.	31.08.2008
80	Medium Voltage Switch Disconnect Isolator - 200 Amps as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	30 Nos.	31.08.2008
90	Medium Voltage Switch Disconnect Isolator - 400 Amps as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	5 Nos.	31.08.2008
100	Lighting Distribution Board as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	10 Nos.	31.08.2008
110	Medium Voltage Industrial Type Switch Board – 4 as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	10 Nos.	31.08.2008
120	Medium Voltage Industrial Type Switch Board – 5 as per the technical specification & commercial conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	2 Nos.	31.08.2008

Note:

The Equipment shall be Guaranteed for a period of 12 months from the date of acceptance or 18 months from the date of despatch whichever is earlier. Please confirm your acceptance in your offer.

BHEL commercial terms & conditions with Price Bid and Bank Guarantee formats can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units > Bharat Heavy Electricals Limited page) under Enquiry reference “2620800032”.

Tenders should reach us before 14:00 hours on the due date
Tenders will be opened at 14:30 hours on the due date
Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present

Yours faithfully,
For BHARAT HEAVY ELECTRICALS LIMITED

Manager / Capital Equipment / MM

Specification for Medium Voltage Distribution Fuse Board				
Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
	Manufacture and supply of Medium Voltage, wall/ column mounting, indoor, enclosed distribution fuse boards comprising of fuse units, HRC fuses, busbar and conforming to the specification and features given below.			
1.0	Distribution Fuse Board			
1.1	Current rating at 415V, 50Hz	16 A/ 32 A/ 63 A (as specified in the scope of supply)		
1.2	Configuration	Three poles and neutral		
1.3	Type of enclosure	Fabricated Sheet steel		
1.4	Number of ways per phase	8 ways/ 12 ways (as specified in the scope of supply)		
1.5	Fuse Units	Porcelain fuse units comprising of fuse base and holder and suitable for HRC fuses		
1.6	Make of the distribution fuse board/ fuse units- Reputed make acceptable to BHEL	Vendor to specify		
2.0	HRC Fuses:			
2.1	Current rating at 415V, 50Hz	16 A/ 32 A/ 63 A (as specified in the scope of supply)		
2.2	Number of Fuses	3 fuses per way		
2.3	Make of the fuse	Reputed make		
2.4	Make, Type and configuration of the fuse offered	Vendor to specify.		
3.0	Approx. overall dimensions of the DB	Vendor to specify		
4.0	General Features of the Distribution fuse board:			

Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
4.1	Metallic enclosure shall be arranged as to prevent any accidental contact between the enclosure and the live parts when the enclosure is in place.			
4.2	Two separate earthing terminals shall be provided			
4.3	Sufficient space shall be left in the interior for accommodation of external conductors from their point of entry into the enclosure upto the terminal.			
4.4	Label to be permanently and securely fixed inside the case to mark the name, current rating of the circuit and fuse rating.			
4.5	The neutral busbar shall be of the same size as phase busbar upto 32A DB and for higher rating it shall be half the size of phase busbar.			
4.6	The busbar chamber covers shall be fitted with dust proof gaskets.			
4.7	The DB shall be painted with one coat of red oxide primer and two coats of enamel paint.			
4.8	The distribution fuse board should conform to IS:2675-1983 and Indian Electricity Rules.			
5.0	Qualifying Conditions:			
5.1	Only those vendors who have supplied and commissioned same or higher capacity DB that is working satisfactorily for at least one year after commissioning should quote.			
5.2	Information about the customers to whom similar equipments have been supplied is to be submitted for qualification of the offer.			
6.0	Scope of Supply	Quantity		
6.1	12 way x 16 A per way distribution fuse board of the configuration and specification as furnished above	4 nos.		
6.2	8 way x 32 A per way distribution fuse board of the configuration and specification as furnished above	6 nos.		
6.3	8 way x 63 A per way distribution fuse board of the configuration and specification as furnished above	11 nos.		

Specification for 3 Phase DOL Starter				
Sl.No.	Description for BHEL Requirement	Specified / To be confirmed by	Offered	Deviations if any
	Supply of 3 Phase Direct on line Starter in sheet steel enclosure as specified below:			
1.0	Starter Suitability	Suitable for starting 3 Phase, 415V, 50Hz, 0.75/1.0 HP induction motor		
1.1	Housing	Sheet steel enclosure corrosion resistant and with cord packing to keep the interior dust and vermin proof.		
1.2	Overload Relay	Bi-metal thermal overload relay of range suitable for 0.75 HP /1.0 HP motor. Vendor to specify the range offered.		
1.3	Contactor current rating	Vendor to specify		
1.4	Coil Voltage	415V a.c.		
1.5	Input Power supply	415V, 3 phase, 50 Hz. A.C		
1.6	Push buttons	Green/Red ON/OFF push buttons		
1.7	Technical catalogue	Vendor to furnish with the offer		
1.8	Earthing	Earthing terminals shall be provided		
2.0	Make of the DOL starter	L&T, Siemens		
2.1	Type No./Make	Vendor to specify		
3.0	Scope of supply	Quantity		
3.1	3 Phase DOL starter in sheet steel enclosure as specified above	75 nos.		

Specification for Medium Voltage Switch Disconnecter Isolator				
Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
	Supply of Medium Voltage Switch Disconnecter Isolator conforming to the specification and features given below.			
1.0	Switch Disconnecter Isolator:			
1.1	Current rating at 415V, 50Hz	32A/ 63A/ 100A/ 200A/ 400A as specified in the scope of supply		
1.2	Configuration	Three poles and neutral		
1.3	Type of enclosure	Sheet steel		
1.4	Voltage rating	415V, 50Hz, a.c		
1.4	Approx. overall dimensions of the isolator	Vendor to confirm		
1.5	Make of the isolator switch	L&T, Siemens, GE, S&S, GEM, Havells		
1.6	Type no. and make of the isolator switch offered	Vendor to confirm		
1.7	Technical leaflet of the isolator switch offered to be enclosed with the offer.	Vendor to confirm		
2.0	General Features of the Switch Disconnecter isolator:			
2.1	The switches shall be totally enclosed and fully shrouded			
2.2	Provided with On/Off flag indication and two earthing terminals			
2.3	Quick make, quick break mechanism, independent of the speed of the operator.			
2.4	All current carrying parts shall be hard silver plated			

Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
2.5	Units to be provided with bolted type neutral links with facility to disconnect neutral easily.			
2.6	Interlock to ensure the lid cannot be opened until the switch is in off position and the possibility to defeat the interlock by a competent examiner.			
2.7	Provided with phase-phase, phase-earth barrier			
2.8	Generous space for wiring, inspection and maintenance			
2.9	Conduit knock-outs at top and bottom or removable gland plates			
3.0	Scope of Supply	Quantity		
3.1	Switch Disconnecter Isolator of 32A current rating as specified above	75 nos.		
3.2	Switch Disconnecter Isolator of 63A current rating as specified above	115 nos.		
3.3	Switch Disconnecter Isolator of 100A current rating as specified above	25 nos.		
3.4	Switch Disconnecter Isolator of 200A current rating as specified above	30 nos.		
3.5	Switch Disconnecter Isolator of 400A current rating as specified above	5 nos.		

Specification for Lighting Distribution Board				
Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
	Manufacture and supply of Medium Voltage, wall/ column mounting, indoor, enclosed Lighting MCB distribution boards comprising of MCB, busbar, interconnection and conforming to the specification and features given below.			
1.0	MCB Distribution Board			
1.1	Current rating	100A, 4 pole MCB for main incomer. 100A, 2 pole ELCB in each phase for phase isolation. 16A, 1 pole MCB for each outgoing way.		
1.2	Configuration	Three poles and neutral DB with per phase isolation		
1.3	Type of enclosure	Fabricated Sheet steel		
1.4	Number of ways per phase	12 ways		
1.5	Busbar Rating	100 A		
1.6	Make of the MCB distribution board- Legrand/ Standard/ Havells make only	Vendor to specify		
2.0	Miniature Circuit Breaker			
2.1	Current rating	16 A/ 100 A (as specified for outgoing/incomer)		

Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
2.2	Number of MCB	36 nos. 16A, 1Pole MCB 3 nos. 100A, 2Pole ELCB 1 no. 100A, 4Pole MCB		
2.3	Breaking capacity of the MCB	9KA / 10KA		
3.0	General Features of the Lighting Distribution board:			
3.1	The DBs shall be ready to use with neutral links, earth links, Busbar and interconnecting wires/links.			
3.2	DB shall be provided with gland plates at the top and bottom with knockouts.			
3.3	Earth bar for facilitating individual earth for each outgoing circuit.			
3.4	Label to be permanently and securely fixed inside the case to mark the name, current rating of the circuit.			
3.5	Gaskets shall be provided to ensure vermin proof condition.			
3.6	The DB shall be provided with single door.			
3.7	The DB shall be painted with one coat of red oxide primer and two coats of enamel paint.			
3.8	The DB should conform to IS:13032-1991 and Indian Electricity Rules.			
3.9	The MCB shall conform to IS:8828-1996			
4.0	Scope of Supply	Quantity		
4.1	12 way x 16 A per way, 3-phase MCB distribution board of the configuration and specification as furnished above	10 nos.		

Specification for Medium Voltage Industrial Type Switchboard-4				
Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
	Design, manufacture and supply of Medium Voltage, floor mounting, free standing, indoor, Industrial type switchboard comprising of fuse switches, busbar chamber and conforming to the specification and features given below.			
1.0	Incomer Fuse Switch unit with fuses:			
1.1	Current rating at 415V, 50Hz	800A		
1.2	Configuration	Three poles and neutral		
1.3	Type of enclosure	Sheet steel		
1.4	Fuses for 3 phases	630A		
1.5	Quantity of Incomer fuse switch	1 no.		
2.0	Outgoing Fuse switch Units with fuses:			
2.1	Configuration	Three poles and neutral		
2.2	Current rating at 415V, 50Hz	400A		
2.2.1	Type of enclosure	Sheet steel		
2.2.2	Fuses for 3 phases	400A		
2.2.3	Quantity of 400A fuse switch	1 no.		
2.3	Current rating at 415V, 50Hz	200A		
2.3.1	Type of enclosure	Cast iron		
2.3.2	Fuses for 3 phases	200A		
2.3.3	Make of the Fuse switch	GE, CH2003N(U)		
2.3.4	Quantity of 200A fuse switch	6 nos.		
2.4	Current rating at 415V, 50Hz	100A		
2.4.1	Type of enclosure	Cast iron		
2.4.2	Fuses for 3 phases	100A		
2.4.3	Make of the Fuse switch	GE, CH1003N(U)		
2.4.4	Quantity of 100A fuse switch	4 nos.		
3.0	Busbars:			
3.1	Current rating at 415V, 50Hz	800A		

Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
3.2	Configuration	Three poles and neutral		
3.3	Material	Aluminium		
3.4	Busbar chamber	CRCA sheet steel of min. 2 mm thickness.		
4.0	Accessories:			
4.1	Voltmeter with selector switch	Analog type, a.c., 0-500V, 96mm square, accuracy class 1.0		
4.2	Voltmeter and switch make	Vendor to specify		
4.3	Indication lamp	3 lamps for the phases		
5.0	Approx. overall dimensions of the Panel	Vendor to specify		
6.0	Make of the Fuse switches- L&T/ Siemens/ GE make only	Vendor to specify		
6.1	Technical leaflet of the fuse switch offered to be enclosed with the offer.	Vendor to confirm		
7.0	General Features of the Fuse switches:			
7.1	The switches shall be totally enclosed and fully shrouded			
7.2	Provided with On/Off flag indication and two earthing terminals			
7.3	Quick make, quick break mechanism, independent of the speed of the operator.			
7.4	Double break isolation arrangement ensuring complete isolation of fuse units when unit is in off position			
7.5	All current carrying parts shall be hard silver plated			
7.6	Units to be provided with bolted type neutral links with facility to disconnect neutral easily.			

Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
7.7	Interlock to ensure the lid cannot be opened until the switch is in off position and the possibility to defeat the interlock by a competent examiner.			
7.8	Provided with phase-phase, phase-earth barrier			
8.0	General Features of Switchboard:			
8.1	The panel shall be of Industrial type construction with enclosed busbar chamber in the middle and the fuse switch units mounted on the top and bottom of the busbar chamber.			
8.2	Busbars shall be made of high conductivity aluminium alloy with 75mmx10mm or equivalent cross section.			
8.3	The neutral busbars shall have a continuous current rating of 50% of the phase busbars. All busbars shall be insulated, colour coded for easy identification of individual phases and neutral.			
8.4	The earth busbar of size 6 x 50mm G.I.Flat shall run through out the length of the switchboard and be terminated at the two ends.			
8.5	High tensile bolts and spring washers shall be provided on all busbars and connection joints.			
8.6	All sheet steel used in the panel shall undergo a rigorous metal treatment process involving alkaline degreasing, descaling in dilute sulphuric acid, phosphating and painting.			
8.7	The switches shall be provided with cable adopter boxes in sheet steel for termination of armoured aluminium cable suitable for the current rating of the switches.			
8.8	Adequate number of busbar supports shall be provided to withstand short circuit current.			
8.9	The busbar chamber covers shall be fitted with dust proof neoprene gaskets.			

SI.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
8.10	The switchboard shall be provided with 50x50x6mm size angle for main frame and 40x40x6mm angle for aux. frames for floor mounting.			
8.11	The connections from the busbars to the switches shall be through flexible insulated copper conductors of adequate cross section.			
8.12	The switchboard shall be painted with one coat of red oxide primer and two coats of enamel paint to match the colour of the switches.			
8.13	The construction of the panel shall generally conform to the Indian Electricity Rules and switches shall conform to the relevant IS.			
9.0	Qualifying Conditions:			
9.1	Only those vendors who have supplied and commissioned same or higher capacity switchboard that is working satisfactorily for at least one year after commissioning should quote.			
9.2	Information about the companies where similar equipments have been supplied is to be submitted for qualification of the offer.			
10.0	Scope of Supply	Quantity		
10.1	Industrial type switchboard of the configuration and specification as furnished above	10 nos.		

Specification for Medium Voltage Industrial Type Switchboard-5				
Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
	Design, manufacture and supply of Medium Voltage, floor mounting, free standing, indoor, Industrial type switchboard comprising of fuse switches, busbar chamber and conforming to the specification and features given below.			
1.0	Incomer Fuse Switch unit with fuses:			
1.1	Current rating at 415V, 50Hz	400A		
1.2	Configuration	Three poles and neutral		
1.3	Type of enclosure	Sheet steel		
1.4	Fuses for 3 phases	400A		
1.5	Quantity of Incomer fuse switch	1 no.		
2.0	Outgoing Fuse switch Units with fuses:			
2.1	Configuration	Three poles and neutral		
2.2	Current rating at 415V, 50Hz	200A		
2.2.1	Type of enclosure	Cast iron		
2.2.2	Fuses for 3 phases	200A		
2.2.3	Make of the Fuse switch	GE, CH2003N(U)		
2.2.4	Quantity of 200A fuse switch	1 no.		
2.3	Current rating at 415V, 50Hz	100A		
2.3.1	Type of enclosure	Cast iron		
2.3.2	Fuses for 3 phases	100A		
2.3.3	Make of the Fuse switch	GE, CH1003N(U)		
2.3.4	Quantity of 100A fuse switch	3 nos.		
2.4	Current rating at 415V, 50Hz	63A		
2.4.1	Type of enclosure	Cast iron		
2.4.2	Fuses for 3 phases	63A		
2.4.3	Make of the Fuse switch	GE, CH63		
2.4.4	Quantity of 200A fuse switch	2 nos.		
3.0	Busbars:			

Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
3.1	Current rating at 415V, 50Hz	400A		
3.2	Configuration	Three poles and neutral		
3.3	Material	Aluminium		
3.4	Busbar chamber	CRCA sheet steel of min. 2 mm thickness.		
4.0	Accessories:			
4.1	Voltmeter with selector switch	Analog type, a.c., 0-500V, 96mm square, accuracy class 1.0		
4.2	Voltmeter and switch make	Vendor to specify		
4.3	Indication lamp	3 lamps for the phases		
5.0	Approx. overall dimensions of the Panel	Vendor to specify		
6.0	Make of the Fuse switches- L&T/ Siemens/ GE make only	Vendor to specify		
6.1	Technical leaflet of the fuse switch offered to be enclosed with the offer.	Vendor to confirm		
7.0	General Features of the Fuse switches:			
7.1	The switches shall be totally enclosed and fully shrouded			
7.2	Provided with On/Off flag indication and two earthing terminals			
7.3	Quick make, quick break mechanism, independent of the speed of the operator.			
7.4	Double break isolation arrangement ensuring complete isolation of fuse units when unit is in off position			
7.5	All current carrying parts shall be hard silver plated			
7.6	Units to be provided with bolted type neutral links with facility to disconnect neutral easily.			

Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
7.7	Interlock to ensure the lid cannot be opened until the switch is in off position and the possibility to defeat the interlock by a competent examiner.			
7.8	Provided with phase-phase, phase-earth barrier			
8.0	General Features of Switchboard:			
8.1	The panel shall be of Industrial type construction with enclosed busbar chamber in the middle and the fuse switch units mounted on the top and bottom of the busbar chamber.			
8.2	Busbars shall be made of high conductivity aluminium alloy with 75mmx5mm or equivalent cross section.			
8.3	The neutral busbars shall have a continuous current rating of 50% of the phase busbars. All busbars shall be insulated, colour coded for easy identification of individual phases and neutral.			
8.4	The earth busbar of size 6 x 50mm G.I.Flat shall run through out the length of the switchboard and be terminated at the two ends.			
8.5	High tensile bolts and spring washers shall be provided on all busbars and connection joints.			
8.6	All sheet steel used in the panel shall undergo a rigorous metal treatment process involving alkaline degreasing, descaling in dilute sulphuric acid, phosphating and painting.			
8.7	The switches shall be provided with cable adopter boxes in sheet steel for termination of armoured aluminium cable suitable for the current rating of the switches.			
8.8	Adequate number of busbar supports shall be provided to withstand short circuit current.			
8.9	The busbar chamber covers shall be fitted with dust proof neoprene gaskets.			

Sl.No.	Description for BHEL Requirement	Specified/ To be confirmed by	Offered	Deviations
8.10	The switchboard shall be provided with 50x50x6mm size angle for main frame and 40x40x6mm angle for aux. frames for floor mounting.			
8.11	The connections from the busbars to the switches shall be through flexible insulated copper conductors of adequate cross section.			
8.12	The switchboard shall be painted with one coat of red oxide primer and two coats of enamel paint to match the colour of the switches.			
8.13	The construction of the panel shall generally conform to the Indian Electricity Rules and switches shall conform to the relevant IS.			
9.0	Qualifying Conditions:			
9.1	Only those vendors who have supplied and commissioned same or higher capacity switchboard that is working satisfactorily for at least one year after commissioning should quote.			
9.2	Information about the companies where similar equipments have been supplied is to be submitted for qualification of the offer.			
10.0	Scope of Supply	Quantity		
10.1	Industrial type switchboard of the configuration and specification as furnished above	2 nos.		