

TECHNICAL SPECIFICATION – REVAMPING OF ELECTRICAL PANEL OF PIT CARBURISING F/C

A. Existing Machine Details			
SL	DETAILS	DESCRIPTION	FIRM'S CONFIRMATION (Strike out whichever is not applicable. Provide details where called for)
1	Furnace	Pit Type Gas Carburising Furnace	Noted / Not Noted
2	Type	WGSRU-60/160	Noted / Not Noted
3	Furnace No	DF - 578	Noted / Not Noted
4	Temp	950°C	Noted / Not Noted
5	Heating	40KW per Zone	Noted / Not Noted
6	No. of Zones	2	Noted / Not Noted
7	Total Heating	80KW	Noted / Not Noted

B. MANDATORY TERMS		
SL	DETAILS	FIRM'S CONFIRMATION (Strike out which ever is not applicable. Provide details where called for)
1	Warranty: 12 months from the date of commissioning or 18 months from the date of supply.	Confirmed / Not confirmed

c. SCOPE OF SUPPLY:

SL.NO	BEML REQUIREMENT		FIRM'S CONFIRMATION (Strike out which ever is not applicable. Provide details of make where called for)
01	CP Profile Multi-function Controller Specification: No. of Program Cycles: 40 (Minimum) With 6-7 Segments of Different Set Temperatures/ CP & Timings per Cycle. Carbon Potential Control: 1 Oxy Probe (Optional of CP/ mV Control) Temperature Control: 3 No's of Thermocouples Analog Outputs - 2 Digital Outputs - 4 Digital Inputs - 4 Communication: RS-485 Modbus / Ethernet Make: PMA/ WEST/ PROTHERM/ EUROTHERM	1 No.	Confirmed / Not confirmed Make: indicate
02	Thyristor Power Controller Rating: 100A, 3Ph, 360 - 500 V AC Application: for 40KW Ni-Cr Resistive Load through 45KVA Step Down Heating Transformer per Zone Display: LCD indicating Output Current & % of Output Power Options: Current Limiting & Different Firing methods Output: 4-20 mA / 0-20mA/ 0-10V DC & Relay for Alarms With Semi-Conductor Fuses & Inbuilt cooling Fan Make: CCI/ PMA/ AEG/ SIEMENS	2 No's	Confirmed / Not confirmed Make: indicate

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03	Safety Temperature Controller with Communication. Make: WEST	1 No.	Confirmed / Not confirmed
04	<p>Control Panel Consisting of Panel Enclosure with IP 54 Protection & Bottom Entry</p> <p>MCCB 200A. Make: SIEMENS/ SCHNEIDER/ HAVELLS</p> <p>SFU – 130A with Thyristor By-pass option – 2 No's Make: SIEMENS/ SCHNEIDER</p> <p>Power Contactor for By-pass (Contactor System) – 2 No's. Make: SIEMENS/ SCHNEIDER</p> <p>Intelligent Panel Digital Energy Meter. Make: CONZERV/ L&T</p> <p>OLR's/ MPCB's. Make: SIEMENS/ SCHNEIDER</p> <p>All Ammeters/ Voltmeters. Make: AE/ MECO</p> <p>Selector Switches, Push Buttons & Indication Lamps. Make: TEKNIC/ L&T</p> <p>All Cables/ Wires. Make: LAPP/ POLYCAB/FINOLEX/V-GUARD/HAVELLS</p> <p>Necessary Panel Cooling Fan Necessary CVT/ Isolation Transformer for Controllers Separate Operator Panel for Hydraulic Lid Operation All other Accessories like Relays, Terminal blocks, Bus Bar, Hooter etc of Reputed Make All other Accessories required for process control as per existing/ Production requirement.</p>	1 Set	<p>Confirmed / Not confirmed Make: indicate</p>

D. SCOPE OF WORK:

SL.NO	BEML REQUIREMENT	FIRM'S CONFIRMATION
01	Dismantling & Removal of Existing Control Panel	Confirmed / Not confirmed
02	Installation, Erection & Commissioning of New Electrical Control Panel	Confirmed / Not confirmed
03	Necessary Power Supply Connections to Transformers, Motors (Circulating Fan & Hydraulic) & other Controls	Confirmed / Not confirmed
04	Provision of Hooter on Panel to indicate Process Cycle Completion	Confirmed / Not confirmed
05	Provision of Indication Lamps for the following a. Circulation Fan ON/ Trip b. Retort Temp Heating ON/ OFF c. Lower Zone Heating ON/ OFF d. Upper Zone Heating ON/ OFF e. Power Supply R/Y/B f. Hydraulic Motor ON/ OFF g. LPG Flow ON/ OFF h. Control ON	Confirmed / Not confirmed

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06	Provision of Digital Ammeters (With 3 Phase Currents on single display) for both Lower Zone Heating & Upper Zone Heating	Confirmed / Not confirmed
07	Programming of CP Profile Multi-function Controller for Total No. of Processes for Pit Carburising Furnace as per our requirement.	Confirmed / Not confirmed
08	Changing of Firing Methods of Thyristor Power Controller as per our requirement	Confirmed / Not confirmed
09	Any other related Electrical Control Panel works to be carried out by firm	Confirmed / Not confirmed
10	Applying Paint for Total Panel	Confirmed / Not confirmed
11	Providing Training for Operation, Maintenance & Trouble shooting of CP Controller & Thyristor Power Controller.	Confirmed / Not confirmed

E. INSTALLATION AND COMMISSIONING :

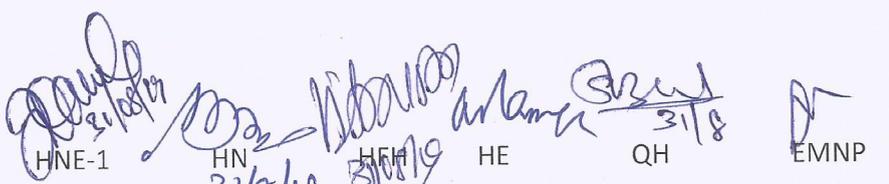
SL.NO	BEML REQUIREMENT	FIRM'S CONFIRMATION
01	<ul style="list-style-type: none"> Furnace should be demonstrated for satisfactory functioning and performance prove out at BEML. Prove-out of Performance for 8 Charges (Approx. time of each charge - 15 Hrs) 	Confirmed / Not confirmed

F. TERMS & CONDITIONS:

SL.NO	BEML REQUIREMENT	FIRM'S CONFIRMATION
01	Firm may visit our works before submitting their offer to study our exact requirement.	Confirmed / Not confirmed
02	Firm has to bring all the Necessary Tools & Equipments to carry out the works as per scope.	Confirmed / Not confirmed
03	Firm should bring Technicians & workmen who are covered under ESI & PF only	Confirmed / Not confirmed
04	All the Panel works shall be completed within 10 Days from the day the Furnace is handed over.	Confirmed / Not confirmed
05	Electrical Control Panel as per our Scope of Supply should be supplied within 8 weeks after release of Purchase Order.	Confirmed / Not confirmed
06	A copy of Electrical Drawing of existing control Panel will be provided if required after release of Purchase Order .	Confirmed / Not confirmed
07	Firm should have commissioned Two No's of similar Panels (CP Controller with Thyristor Power Controller) in the past Seven Years. Commissioning Report/ MOM should be enclosed along with the offer	Confirmed / Not confirmed

G. DOCUMENTATION:

SL.NO	BEML REQUIREMENT	FIRM'S CONFIRMATION
01	Firm has to provide GA Drawing of Electrical Control Panel for Approval before supply.	Confirmed / Not confirmed
02	Firm has to provide Two Sets of Electrical Circuit Drawings.	Confirmed / Not confirmed
03	Firm has to provide Manuals for CP Controller & Thyristor Power Controller.	Confirmed / Not confirmed
04	Firm has to provide Calibration Reports for CP Controller & Temperature Controller.	Confirmed / Not confirmed



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