

NIQ FOR DIESEL GENERATOR SET (GENSET)

PREAMBLE

I.I.T. Delhi is in the process of procuring "GENSET" at its project site at village Malunga, district Jodhpur, situated 37 km NW of Jodhpur city, Rajasthan.

The terms and conditions for submitting the quotation are given below:

1. Outer sealed envelop should contain the "Technical Bid" and the "Financial Bid", described in para 2 and 3 below. The following should be superscribed prominently on this outer cover, 'QUOTATION for "GENSET", RP02260'.
2. A separate sealed envelop containing the 'Technical Bid', giving the detailed technical specifications of items offered by you with 'Technical Bid for "GENSET" RP02260' superscribed on the envelop.
3. A separate sealed envelop containing the 'Financial Bid' giving detailed financial bid corresponding to the items specified in the technical bid, again superscribing the envelop with 'Financial bid for GENSET", RP02260'.
4. Authority of I.I.T. Delhi reserves the right to reject any or all quotations without assigning any reasons.

ELIGIBILITY

You should have been in area of "DIESEL GENSETS" at least for the past 5 years. Printed brochure/Order numbers / Order copies / Other proof for 3 such equipments should be enclosed (without which the bid will be summarily rejected).

SCOPE OF WORK

The scope of work includes transport to site, erecting, testing and commissioning of the "GENSET" described under "Technical Details" attached.

All necessary, statutory approvals, as applicable, is the responsibility of the supplier.

DETAILS TO BE INCLUDED IN 'TECHNICAL BID'

1. Please note that the 'Technical Bid' and 'Financial Bid' should be separate.
2. Do not include price in 'Technical Bid'.
3. General credentials of your firm with all commercial and all governmental registration details must be provided.
4. List of organizations, with addresses and phone numbers (if available), where you have supplied "GENSET".

FINANCIAL BID

1. Please give 'Financial Bid' **separately** as detailed in para(3) under "PREAMBLE".

SUBMISSION AND OTHER DETAILS

- 1) Send in your quotation, along with other documents asked for, under sealed cover, to reach by 14 days of publication of the web advertisement as above, or, last date as mentioned, to the following address, and with the words "QUOTATION for GENSET, RP02260", prominently written on the outer cover. **Do not send any document by email.**
- 2) The technical details and specifications of the equipment required by us are enclosed herewith.
- 3) Delivery F.O.R., Installation and Commissioning to be done at Project Micro-Industry site at village Malunga, District Jodhpur, situated 37 km NW of Jodhpur city, Rajasthan.
- 4) Please indicate terms for Maintenance/Replacement/Service etc. Warranty should be for minimum one year.
- 5) Please indicate any educational discounts offered to IIT, Delhi, clearly in your 'Financial Bid'.
- 6) Kindly send in your quotation to:

PRINCIPAL INVESTIGATOR (RP02260)
Head's Office, Room No. IV-236
Department of Applied Mechanics
Indian Institute of Technology, Delhi
New Delhi-110016

DIESEL GENERATOR SET (GENSET)

TECHNICAL DETAILS FOR GENSET

(INCLUDE IN TECHNICAL BID AS ASKED BELOW)

PLEASE SUPPLY THE DETAILS AS ASKED FOR

- 1) 125 kVA, 415 Volts, 3 phase Silent DIESEL GENERATOR SET.
- 2) Mention type make of Diesel Engine, which should develop around 155 BHP (± 5).
- 3) Alternator 125 kVA 415 Volts 3 phase mounted on common base frame (Mention type and make of alternator).
- 4) Engine Alternator to be mounted on a common base complete with the following:
 - a) Automatic Control Panel for automatic change-over
 - b) Fuel Tank
 - c) Batteries and leads
 - d) Silencer - Residential
 - e) AVM Pads
 - f) First fill of lube oil
 - g) Acoustic Enclosure

1. DIESEL ENGINE: Mention make of engine

Diesel engine rated at 1500 RPM, water cooled, four stroke, FOUR-cylinder, turbocharged, electric start model conforming to BS : 5514 with capacity of 10% over loading for one hour in twelve hours duration having following accessories for scope of supply.

- 1.1 **Air Intake System** with Air intake manifold and dry type air cleaner.
- 1.2 **Exhaust System** with Turbocharger, SS Flexible bellow, Companion flanges for silencer & bellow and Exhaust silencer.
- 1.3 **Coolant System** with Engine mounted centrifugal water pump, Radiator and Coolant additive concentrate.
- 1.4 **Lubricating System** with Oil pan, Engine mounted lube oil pump and Lube oil filter.
- 1.5 **Fuel System** with fuel pump with Mechanical Governor, 12V DC solenoid coil and Replaceable fuel filter
- 1.6 **Starting System** with 12V DC electric starter and 12V DC battery charging alternator.
- 1.7 **Safety Controls** with Low lube oil pressure trip and High water temperature trip.

2. POWERSTART CONTROL MICROPROCESSOR BASED (Mention type)

The Power Start should have, Microprocessor based, generator set monitoring and control system mounted in the Genset control panel. The control to provide a simple operator interface to the generator set, with manual and remote start/stop control shut down fault indication, and an LCD display. Integration of all control functions into a single control panel for providing enhanced reliability and performance.

2.1 Mention details of LED lamps indicating, displaying various operations like Genset Running, Start, Shut down etc.

2.2 LED including lamps - The control to include LED lamp indication for the following functions

- Genset Running
- Remote Start
- Shutdown
- Warning
- Manual, Auto and Stop

2.3 Provide details of data log.

2.4 Provide display of **Alternator Data**

- Voltage (single or three phase line-to-line and line-to-neutral)
- Current (single or three phase)
- KVA (three phase and total)
- Frequency

2.5 Provide display of **Engine Data**

- Starting Battery Voltage
- Engine Running Hours
- Engine Temperature
- Engine Oil Pressure

3. Functions: Control/Protection: Provide details

4. Provide also the following

- Vibration damper
- Front engine support
- Flywheel with housing

5. ALTERNATOR: Mention make of Alternator

Synchronous alternator of 125 kVA, single bearing, suitable for continuous operation at 1500 RPM generating 415 volts at 0.8 p.f.(lag), 50 Hz, 3 phase, 4 wire system. The alternator shall be Brushless type, self excited & self regulated through an AVR. The alternator will be suitable for tropical climate and shall generally conform to IS: 4722. The salient features of the alternator should be:

- $\pm 1.5\%$ voltage regulation (max) in static conditions.
- IP: 23 protection with class 'H' insulation.
- Permanent lubricating bearing.
- Permissible overload of 10% for one hour in 12 hours of operation.

6. CONTROL PANEL

The Control Panel is alternator mounted & fabricated from sheet metal and Powder Coated after tank treatment processes. The panel to be equipped with:

- One no. 3 pole 100A MCCB with overload & short circuit protection.
- Controller for Engine and Alternator Metering and Protection.
- Relay module with relays, 12V DC

7. BASE FRAME

Engine and alternator are mounted through AVM pads, on a common channel iron fabricated Base Frame.

8. FUEL TANK

Daily service fuel tank of 200-250 Ltrs. made of 14 SWG sheet metal inbuilt inside base frame complete with drain valve, air vent, inlet and outlet connection. The fuel tank is meant for 8 hours of running of DG set.

9. BATTERY: One no. of suitable capacity (Mention make)

10. DOCUMENTATION

1 set of following documents shall be provides with each set:-

- O & M Manual of Diesel Engine
- Spare parts catalogue of diesel engine
- Test Certificate of diesel engine
- Test certificate of Alternator
- Test Certificate of D.G. Set