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| Indent No. : E/Y/4100/ 20143957 Specification No. : GRI/ 16/02/14-15 | ELECTRO DYNAMIC HEAVY-DUTY SHAKER SYSTEM | Date : 8.10.2014 Page 1 of 2 |
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1.Purpose :



Electro-dynamic Heavy-duty Shaker System shall be used for

- a) Vibration testing / Fatigue testing of components for relatively long durations depending on requirements
- b) Structural Testing
- c) Modal Testing- SIMO/MIMO of relatively large structures of rotating electrical machines of higher rating beyond 250MW – Turbogenerators, Exciters, Motors, Turbines etc.
- d) Secondary calibration of vibration sensors- Piezoelectric type, Eddy-current type, Fibre-optics type etc.
- e) Imparting static tension as per requirements to wire like components

2. Specifications:

A. Shaker System

- 1. Light weight, compact, higher force rating shaker system shall be preferred.
- 2. Output rated Force Sine (peak) with or without forced air cooling ≤ 2000N
- 3. Useful frequency range : DC to 1kHz
- 4. Stroke length continuous : ≥25.4 mm (pk-pk)
- 5. Acceleration : > 30g (300ms⁻²)
- 6. Excitation Signal : Sine, Impulse, Random etc. based signals
- 7. Pay-load : >10kg
- 8. Shaker head should be changeable for general purpose vibration testing and modal testing. Hence separate heads should be quoted, if applicable.
- 9. Sturdy shaker support structure
- 10. Matching Power Amplifier system
- 11. Cooling System : Forced air
- 12. Matching Blower system for forced air cooling
- 13. Built-in protection System : w.r.t. Max. Temperature, Displacement, Current etc.
- 14. Matching/Suitable Stinger components and accessories : Preferably with 10-32 threaded end
- 13. Power Input : AC ~190-240V, 47-51Hz, 1Ø / 3Ø or suitable DC adoptor

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- 14. Environment : 4 to 45°C, 90%RH
- 15. Compliance with national/ international standards w.r.t. Safety, Emission and Immunity

B. Signal Generator:

- 1. Output level : ≥ 5V (rms)
- 2. Output Signals : Sine, Impulse, Random, Pseudo-random, Chirp etc.

3.0 PRE-QUALIFICATION REQUIREMENTS (PQR):

Only those vendors (OEMs / authorized dealers), who have supplied and commissioned Electro-Dynamic Heavy-Duty Shaker system as per required specifications or any other similar instrument shall be considered.



In such case, following informations should be furnished by vendors/party.

- 1. Name of the agency to whom such instrument has been supplied
- 2. P.O. No. and Date of commissioning and its report.
- 3. Performance certificate of the supplied instrument from the agency to whom such equipment has been supplied.

Also, those party (parties) may also be considered who had participated in the procurement of similar such equipment in the recent past and got technically cleared by BHEL HEEP Haridwar. In such case, Indent no. / case file no. and date should be mentioned.

4.0 General Requirements :

- a) The party should quote complete system including the accessories specific to their system.
- b) The party is to carry out commissioning of the system at our works.
- c) The party is to supply TC/ GC, one set of original manual (hard copy) , detailed calibration of the system as whole, as well as essential components as applicable.

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