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| **TECHNICAL SPECIFICATION OF HYBRID ELECTRIC SYSTEM** | | | | |
| **1.0** | **Details of Hybrid System Manufacturer / Supplier / Installer** | | |  |
| a. | Name of the HES Manufacturer / HES Supplier: | | |  |
| b. | Address: | | |  |
| c. | Telephone No. and Fax No.: | | |  |
| d. | Contact person: | | |  |
| **2.0** | **System Identification** | | |  |
| a. | Identification No.: | | |  |
| b. | Variants, if any: | | |  |
| **3.0** | **Electric Motor** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Model name/Identification No.: | | |  |
| c. | Type: (e.g. Asynchronous AC Induction, Synchronous Permanent Magnet AC, BLDC, SRM etc.) | | |  |
| d. | No. of Phases: | | |  |
| e. | Maximum Power (kw @ xxxx rpm): | | |  |
| f. | Maximum torque (Nm @ xxxx rpm): | | |  |
| g. | Maximum Thirty Minutes Power, kW: | | |  |
| h. | Maximum Thirty Minutes speed km/h: | | |  |
| i. | Cooling System (Liquid /Air / Naturally air cooled): | | |  |
| j. | International Protection (IP)-Code: | | |  |
| **4.0** | **Motor Controller Unit** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Model name/Identification No: | | |  |
| c. | Type: | | |  |
| d. | Control Principle: (e.g vectorial / open loop / closed / other) | | |  |
| e. | Cooling System (Liquid /Air / Naturally air cooled): | | |  |
| f. | International Protection (IP)-Code: | | |  |
| **5.0** | **REESS** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Identification No.: | | |  |
| c. | Type: (e.g Lead Acid/ Li-Ion etc.) | | |  |
| d. | Voltage: | | |  |
| e. | Capacity (kWh): | | |  |
| f. | End of discharge voltage value: | | |  |
| g. | No. of batteries used: | | |  |
| h. | Weight of REESS: | | |  |
| **6.0** | **Charger (Applicable only for Externally Chargeable HEV’s)** | | |  |
| a. | Name of the manufacturer | | |  |
| b. | Model name/Identification No. | | |  |
| c. | Type | | |  |
| d. | Rating | | |  |
| e. | Charger (on board / external): | | |  |
| f. | Specifications of mains | | |  |
|  | i | mains (single phase/ three phase): | |  |
|  | ii | Nominal Voltage (V) and frequency (Hz) with tolerances: | |  |
| g. | Recommended duration of a complete charge: | | |  |
| h. | In case of on-board charger | | |  |
|  | i | Continuous rating of charger socket (A): | |  |
|  | ii | Maximum initial in-rush current (A): | |  |
| **7.0** | **Charging / interlocking Socket** | | |  |
| a. | Name of the manufacturer: | | |  |
| b. | Model name/Identification No.: | | |  |
| c. | Type: | | |  |
| d. | Rating: | | |  |
| **8.0** | **Power Harness** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Model name/Identification No.: | | |  |
| c. | Type : FLRY | | |  |
| d. | Operating Temperature: | | |  |
| e. | Insulation material used: | | |  |
| f. | IEC protection class | | |  |
| g. | Conduits provided Yes / No: | | |  |
| h. | Cable size ( DC side ) sqmm: | | |  |
| i. | Cable size ( AC side ) sqmm: | | |  |
| j. | Electrical circuit diagram and Layout: | | |  |
| **9.0** | **Control Harness** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Model name/Identification No.: | | |  |
| c. | Type: FLRY | | |  |
| d. | Operating Temperature | | |  |
| e. | Insulation material used: | | |  |
| f. | IEC protection class: | | |  |
| g. | Conduits provided Yes / No: | | |  |
| h. | Cable size in sqmm: | | |  |
| i. | Electrical circuit diagram and Layout: | | |  |
| **10.0** | **REESS State of Charge (SOC) and Fault indicator / HMI** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Model name/Identification No: | | |  |
| c. | Type: | | |  |
| d. | Details of indication when state of charge of the REESS reaches a level  when the manufacturer recommends re-charging | | |  |
|  | i | | Indication format: |  |
|  | ii | | Relationship of state of charge indicator and the indication: |  |
| **11.0** | **Hybrid Controller Unit** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Model name/Identification No.: | | |  |
| c. | Type: | | |  |
| **12.0** | **REESS Management System (Popularly known as Battery Management System, BMS)** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Model name/Identification No.: | | |  |
| c. | Type: | | |  |
| **13.0** | **Brief Description of System Including Dimensional Layout for Hybrid Electric System components Installation in the vehicle.**  Typical layout shall indicate details of circuit brakers, MCBs used, location of charger, etc., and key Hybrid Electric System (HES) components | | |  |
| **14.0** | **Catalytic Converter (OE fitted)** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Model name/Identification No.: | | |  |
| c. | Type: | | |  |
| **15.0** | **Current Limiting Device (Fuse)** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Identification No.: | | |  |
| c. | Voltage/current rating: | | |  |
| d. | Type: | | |  |
| **16.0** | **Main Contactor / REESS Cut-off Switch** | | |  |
| a. | Name of manufacturer: | | |  |
| b. | Identification No.: | | |  |
| c. | Voltage/current rating: | | |  |
| d. | Type: | | |  |