

**Detailed Specification for Diesel Generator**

Supplying, installing, testing & commissioning of DG set with following specifications. Power rating as per standard reference condition as per-BS 5514/ISO 3046/ ISO 8528 & IS 1002/ISO 3046 Generator set specification. Engine: Diesel generating set are rated at 1500RPM & conform to ISO 8528 specification. The engines are radiator cooled, four stroke & multi cylinder, conforming to ISO 3046. The scope of supply includes: Electrical starter motor 12V DC Battery charging alternator, Bosch fuel system with mechanical governor, A1 Class. Spin-on lube oil filter, Spin-on dual fuel filter with water separator, Turbocharger, Charge air cooler, Silencer (Hospital grade), Dry type air cleaner, Shutoff coil, Flywheel & flywheel housing, First fill of lube oil and coolant, Safety for low lube oil pressure, Safety for high water temperature, Permissible overload of 10% for 1 hr in 12 hrs of operation Capacity of Fuel Tank: Fuel tank suitable for 8 hours of operation Alternator: Alternator is suitable for operation at 1500 RPM, 415 V, 0.8 pf (lag) suitable for 50 Hz, 3 phase, 4 wire systems, conforming to IS/IEC 60034-1. The Alternator is brush less type, screen protected, revolving field, self excited, self regulated through an AVR. The alternator shall have Plus or Minus 1.0% Voltage regulation (max) in static conditions- IP: 23 protections with insulation class F&H. Mounting arrangement: Engine and alternator are mounted on a common MS fabricated base frame with AVM pads. Control Panel: The control panel is manufactured with 14/16 gauge CRCA sheet and is powder coated for weather-proof and long lasting finish. The control panel consists of the following parts:- PS0500 Controller, Aluminum bus bars with suitable capacity within/outgoing terminals, Indicating IA for Load On and Set Running, Instrument fuses duly wired & ferruled, MCCB of suitable rating with overload & short circuit protections. Genset Controller: microprocessor based generator set monitoring and control system. The control provides a simple operator interface to the generator set, manual & remote start/ stop control, shutdown fault indication, & an LCD hour counter. The integration of all functions into a single control system provides enhanced reliability and performance compared to conventional generator set control systems. This control has been designed and tested to meet harsh environment in which gensets are typically applied. Features, Functions, protections 16 character x 2 line alphanumeric LCD display with LED Backlight. Operator interface, Provide a record of most recent fault conditions. Fault history stored in the control non volatile memory, Provide Alternator Data. Voltage (1 ph or 3 ph line to line and line to neutral voltage, Current (1 ph or 3 ph), kVA (3 ph and total), Frequency, Provide Engine Data, Starting battery voltage, Engine running hours, Engine Temp, Engine oil pressure, Control includes provision for Service adjustment and calibration of DG control functions, Voltage, frequency selection, configurable input & output setup, Meter calibration, Engine controls, Power Start operates on 12 VDC batteries,-Auto start mode accepts a ground signal from remote devices to automatically start the DG set. The remote start will also wake up the control system from sleep mode. Engine Starting -The control system supports automatic engine starting, Primary and back up start disconnects are achieved by battery charging alternator feedback or main alternator output frequency. Controller provide configurable time delay of 0-300 secs to start after remote start signal and time delay of 0-600secs prior to shut down after stop signal. Sleep mode increase battery life. Configurable current settings from low to minimize current draw when genset is not working. Engine Protective functions include, Configurable alarm output, Emergency stop: Annunciated

whenever an emergency stop signal is received by the control. Low lube oil pressure warning and Shutdown, High engine water temp warning / Shutdown, Low coolant temp warning, Sensor failure indication, Low and high battery voltage warning, Weak battery warning, Fail to start shut down, Cracking lockout: Control will not allow the starter to engage or to crank the running engine Cyclic cranking: Configurable for the number of starting cycle, (1 to 7) & duration of crank & rest periods. Alternator Protective functions includes, High & Low AC voltage shut down, Under & Over frequency shutdown/warning, Loss of sensing voltage input shut down. Acoustic enclosure: The acoustic enclosure shall be made of 1.6 mm thick CRCA sheets in suitable approved shade & a structural/ sheet metal base frame painted in black. The walls of the enclosure are insulated with fire retardant foam so as to comply with the 75dBA at 1m sound levels specified by MoEF The enclosure has the following features: Specially designed to meet stringent MOEF/CPCB norms of 75dBA at 1m at 75% load under free field conditions, Two point lifting for easy handling at customer site, Designed to have optimum serviceability, Air inlet louvers specially designed to operate at rated load made on special purpose CNC machines for consistency in quality & workmanship, Powder coated for long lasting service life & superior finish, With UV resistant powder coating, can withstand extreme environment, Use of special hardware for longer life, Insulation material meets exacting IS 8183 specifications for better sound attenuation, Flush styling - no projections, Fluid drains for lube oil and fuel, Fuel filling point inside the enclosure. The complete set shall have sufficient safety & adhere to NEC, NBC 2016, IEC, CPWD specification, PCB norms & KSGEI Acts & Rules with all lead & lifts complete as per specification & direction of engineer in charge. 200KVA/160kw.