

## TECHNICAL SPECIFICATION OF 48V DC BATTERY SET

### 48V BATTERY SET

The specification covers the design, manufacture testing at works and supply of 48 V, 200AH battery with a battery stand, inter cell/ row connections and accessories complete as per IS 1652 : 2013 and latest amendments. The batteries are required to provide DC supply (48 Volts) to PLCC equipment.

#### 1.0 GENERAL:

The battery shall be lead acid type with 'plante' positive plates

The plates shall be designed for maximum durability, during all service conditions including high rate of discharge and rapid fluctuations of load.

#### 1.1 CONSTRUCTION

- a) Each cell shall be assembled in heat resistant shock absorbing robust, clear glass or polymer container, the float type I level indicator.
- b) Electrolyte level shall be marked on the container or external float indicators shall be provided. The marking shall be for upper and Lower limits.
- c) Sufficient sediment space shall be provided so that the cells will not have to be cleaned out during normal life.
- d) Open type cells shall be provided with suitable spray arresters and separate perforated transparent plastic covers; anti-splash type vent plug shall be provided for type cell.
- e) Separator between plates shall permit free flow of electrolyte. Separator shall be of acid resisting materials.
- f) The cells shall be supported on porcelain insulator fixed on to the rack with adequate clearance between adjacent cells.
- g) The battery shall consist of 24 cells of 2 volts each and of 200AH capacity at 10 hours discharge rate.
- h) The cell terminal posts shall be provided with connector bolts and nuts effectively coated with lead to prevent corrosion.
- i) Lead or lead coated copper connectors shall be furnished to connect up cells of battery set.
- j) Positive and negative terminal posts shall be clearly and indelibly marked for easy identification.
- k) Lead coated bent copper plate, tubular copper lugs, teak wood clamp, bolts, nuts, washers etc., shall be furnished for connection of outgoing aluminum conductor cables.
- l) Where the cells are called upon to discharge at very high rates, the fitness of lead coating of connectors shall be greater than 0.025 mm.

#### 1.2 RACKS

- a) The racks for supporting battery cells shall be designed for double row double tier arrangement and shall be constructed of best quality teak- wood, painted with at least three coats of anti-acid black paint.

- b) Rack shall be free standing type, mounted on porcelain insulators.
- c) Porcelain number plates for each cell shall be provided for being fixed on to the racks

### 1.3 TESTS

The supplier shall carry out necessary tests for local action, internal resistance, efficiency test and other routine test as stipulated in relevant IS.

The bidder should furnish along with his bid copies of the type test and routine test conducted on similar equipment in accordance with relevant standards.

### 1.4 FITTING AND ACCESSORIES :

Each battery set shall be furnished complete with the following:

- a) First charge of electrolyte +10% extra over the required quantity.
- b) Teak-wood racks painted with atleast three coats of anti-acid paints.
- c) Strand insulators plus 5% extra on and above the required quantities.
- d) Cell insulator plus 5% extra over the required quantity.
- e) Cell inter connectors and take - off
- f) Cell numbering tag with fixing arrangements.
- g) Teak wood cable clamps with hardware.

The following- accessories shall be supplied along with battery set for each station.

- a) One (1) inter connector bolt wrench.
- b) One (1) Hydrometer with handle.
- c) One (1) Thermometer with specific gravity correction scales.
- d) One (1) digital multimeter for voltage measurement
- e) One pair of rubber hand gloves
- f) Plastic funnel and mug for filling of distilled water/electrolyte