



GIGANET Sealed Valve Regulated Lead Acid (VRLA) SMF Battery Installation, Usage & Maintenance Manual

1. Battery Installation

1.1 Preparation before installation

1.1.1 Check battery packing condition before installation, if there is any damage or leakage, then please double inspect the battery condition.

1.1.2 On site checking, pls open the packing and check the battery condition, check the OCV (For 12V battery, OCV >12.5V) of the battery by Multimeter. For middle and big capacity battery, please check if there is any corrosion on the carton or tissue paper under the battery. If any above faulty case happens, then please replace a new battery.

1.1.3 Before installation, battery should be stored in clean, dry and good ventilation place, the recommendable temperature is 0~30°C. Storing period can not exceed 6 months, otherwise should be recharged in time.

1.2 Precaution in battery installation and usage:

1.2.1 Battery should be installed as upright or horizontal;

1.2.2 Battery should not be installed in direct sunlight, kept away from any heat source or electrical equipment which cause spark easily. Battery can not put near the ambient with organic solvent or corrosive gas, at least 0.5M clearance should be provided. The ventilation hole of the heater, air-conditioner or the exothermic part of the Switch Power Supply should not directly face the battery.

1.2.3 Battery should be used under a dry environment with good ventilation and smoke alarm, At least 15mm clearance should be provided between the batteries.

1.2.4 Battery can not be installed or used in the environment which maybe flooding;

1.2.5 Battery can not be covered by poly film which may cause static electricity in case of any explosion.

1.2.6 Battery is fully charged before shipment, and make sure no short circuit happens. Move the batteries carefully and please don't touch the battery terminals or the safety valve during delivery or installation.

1.2.7 The ground/floor load capacity should be considered before battery bank installation (according to architectural drawings)

1.2.8 Battery should be installed in battery rack, the loading shelf for battery should be in plate steel/channel steel to ensure good ventilation and easy installation/maintenance/inspection. It's recommendable that the battery rack not be grounded to avoid any fire caused by short circuit due to leakage during delivery or installation. Battery rack should be installed with enough space for all-round view inspection, and also there should be enough space for better inspection and operation between each shelf inside the rack.

1.2.9 During battery connection, the cross sectional area of the connection wire should be larger than area needed in full load, the shorter the better.

1.2.10 Due to the high voltage in the battery set, during battery connection, please wear rubber gloves, and make sure the tools are insulated, like torque wrench. It's forbidden that torque wrench or other metal tools connect both positive and negative terminals at the same time, otherwise will cause short circuit and get hurt.

1.2.11 Before battery installation, please use the steel wire brush to scrub the terminal till metallic luster appears, and keep the connection clean; Tighten the bolts by torque wrench, the specified torque value: battery below 50ah, with 4.4N.M; 50ah and above, with 10.9N.M.

1.2.12 When connecting the battery with the charging equipment or load, or breaker, must be sure the electrical circuit be set on "OFF" mode. The positive terminal of battery must be connected with the positive terminal of charging equipment. And the negative terminal of battery must be connected with the negative terminal of charging equipment.

1.2.13 After installation, the battery should be charged before running. Battery should be charged immediately after discharging. In the floating use, the cell voltage should be more than 2.2V, if it's less than 2.2V, the battery should be equally charged. The best charging current is 0.1~0.2 C10A.



2. Battery Usage

2.1 Battery should be inspected within 48~72hours after installation, check every battery (including floating charging /constant charging voltage/current etc.), especially the bottom of the battery in case any leakage caused by crash during transportation or installation. Replace the leakage battery immediately if needed and make an inspection record.

2.2 Battery can be used in the environment temperature between -20 and +50°C, the life time will be longer if working temperature is between 10 and 30°C.

2.3 When cleaning the surface of the battery, soapy water can be used only; in case there is a fire, carbon dioxide (CO₂) type fire extinguisher should not be used, carbon tetrachloride (CCL₄) type is recommended.

2.4 Batteries of different capacity, different aging degree or different specification can not be installed together.

2.5 Please do not overcharge or over-discharge the battery, otherwise the life time will be shortened. 2.6 Please do not increase or decrease the load of any battery in battery string. For example, when the battery strings is backing up with one load, connect one or some battery from the series connection to backup with the other load at the same time, it's forbidden.

2.7 When the load ranges from 0 ~100%, the charging equipment should meet 1%regulation accuracy.

2.8 Battery floating voltage is the charging voltage under 25°C, when the temperature difference is more than 10°C, please modify the floating voltage, otherwise the battery will get damaged. Each 1°C more, the charging voltage should be decreased by 0.003/cell (12V battery is 6 sells), or else, increase the voltage by 0.003V/cell.

3. Battery maintenance

3.1 Every 3 months, It's necessary to conduct routine inspection on each battery, including floating charging voltage, constant charging voltage/ current, cracks, leakage, terminal corrosion, abnormal temperature ect., and place new battery in time if needed.

3.2 Inspect the battery and keep good maintenance records, please look into the reason and replace the faulty battery if there is any abnormal condition, like abnormal floating charging voltage, crack, leakage, container physical damage or abnormal temperature ect.

3.3 Battery connections should be inspected at least every 12 months in case the connections maybe get loose. Do not dismantle/assemble/adjust or loose the battery wiring when the battery is still running. 3.4 When the battery strings is running, please replace the faulty battery if any case of below abnormal conditions is found: abnormal floating charging voltage, crack, leakage or container physical damage, terminal corrosion, abnormal temperature ect.