

BASIC INSTALLATION AND OPERATION MANUAL FOR GNB® MARATHON® FTX® LEAD ACID BATTERIES

See instruction manual, GB5081, for detailed instructions.

1.0 GENERAL INFORMATION

The GNB Marathon FTX is a 12 volt, valve regulated lead acid (VRLA) stationary battery. Personnel handling, installing, operating, and maintaining this energy storage device should read and review all safety precautions prior to unpacking.

2.0 SAFETY PRECAUTIONS

- 2.1 Warning: Risk of fire, explosion, or burns. Do not disassemble, heat above 50 degrees Celsius, or incinerate.
- 2.2 GNB Marathon FTX contains lead and sulfuric acid electrolyte which can cause burns and/or other serious injury.
- 2.3 Under certain operating conditions, GNB Marathon FTX will generate explosive hydrogen gases. Store and operate batteries in a well-ventilated area. Keep sparks, flames, and smoking materials away from the battery area.
- 2.4 When working with batteries, wear rubber apron, rubber gloves, and eye protection.
- 2.5 All installation tools should be adequately covered with vinyl electrical tape or suitable non-conducting material.
- 2.6 Disconnect the AC and DC circuits before working on batteries or charging equipment.
- 2.7 Do not mix Marathon FT and Marathon FTX batteries within a series connected string. Parallel connected strings of Marathon FT and Marathon FTX are acceptable.

3.0 STORAGE

- 3.1 It is recommended that batteries be stored indoors in a cool [25°C (77°F)], clean and dry location.
- 3.2 The storage interval between the date of shipment and the date of initial charge should not exceed six (6) months @25°C (77°F); or (4.5) months @ 30°C (86°F); or three (3) months @ 35°C (95°F).
- 3.3 Storage beyond these periods without proper charge can result in excessive sulfation of plates which is detrimental to battery performance and life.

4.0 CHARGING

- 4.1 Charge (e.g. initial, boost, equalize, refresh) Marathon FTX after an extended time in storage at 2.40 Volts Per Cell (VPC) for 24 hours.
- 4.2 If the Marathon FTX battery is fully discharged or OCV is less than 12.30VDC, recharge using a constant voltage charger set to 2.40 volts PER CELL (VPC) for 72 hours OR set to float voltage (see 4.3-4.4 below) for 168 hours. For alternate recharge profiles reference GNB document GB5081. Note: Recharge current should not exceed 54 amps for Marathon M12V155FTX or 63 amps for Marathon M12V180FTX.

4.3 Recommended FLOAT (e.g. standby) voltage range for Marathon FTX at 77°F (25°C) is 2.25 to 2.30 Volts Per Cell (VPC).

4.4 For all other temperatures other than 77°F (25°C) the following formula can be used to determine the temperature corrected voltage per cell for float and equalize charge conditions:

$$V_{\text{corrected}} = V_{25^{\circ}\text{C}} - [(T_{\text{actual}} - 25^{\circ}\text{C}) \times (.0055)]$$

OR

$$V_{\text{corrected}} = V_{77^{\circ}\text{F}} - [(T_{\text{actual}} - 77^{\circ}\text{F}) \times (.003)]$$

Note: Temperature corrected charge voltage ($V_{\text{corrected}}$) should not fall below 2.21 VPC or exceed 2.40 VPC.

5.0 INSTALLATION

- 5.1 For non-central office or customer premises installations, the battery system installation must follow the National Electrical Code (and/or applicable international, federal, state, local electrical codes) along with the information contained in the Instruction Manual.
- 5.2 Batteries being installed in a network telecommunication facility as part of a centralized power system must be grounded to the Central Office ground system as appropriate for that facility. The required grounding shall consist of connecting the return side to the Central Office grounding system.
- 5.3 Connector Torqueing
 - 5.3.1 After cleaning contact surfaces, install all connectors hand tight to allow for final alignment of 12 volt battery blocs. Once final alignment is made, all connections should be torqued to the value shown on the battery.

6.0 INSPECTION REPORTS*

Complete a set of annual readings on individual battery voltage, battery string voltage, and ambient temperature.

*minimum requirements for warranty purposes