



NARADA POWER SOURCE CO., LTD.

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Warranty Certificate for NARADA Battery

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Zhejiang Narada Power Source Co. Ltd. is one of the largest manufacturers of Batteries producing Lithium-Ion Batteries specially designed for Telecom application.

Narada will provide

Full warranty up to 3 years for the offered battery NPFC series lithium-ion module and system against any manufacturing defects or deterioration of the battery performance due to any manufacturing defects.

The warranty is subjected to following terms & Conditions

- 1) The warranty is commenced from the date of delivery or manufacturing date +3 months, whichever is later.
- 2) Total daily cycle Depth of Discharge to more than 80%, on occasion.
- 3) Ambient temperature should be controlled at 15 DegC to 30 DegC, highest temperature should not exceed 45 DegC.
- 4) Narada will be not held response if the battery surface temperature rises above 55 DegC.
- 5) Any storage and maintenance of this battery shall in accordance with Narada's published operation manual. Specially we need take note that:
 - a) Battery shall be stored with 50% SOC condition
 - b) Ambient temperature shall be kept from 15degC to 35degC, otherwise may increase secondary reaction rate
 - c) Fully charge and discharge, and then recharge back to 50%SOC with 3 months interval during storage
- 6) Narada would replace the battery during warranty period on the basis of faulty cell (individual cell) but not as whole string/(s) (string means all of the cells in same series).
 - a) E.g. for 48V system, there is 15 pieces of 3.2V individual cells as in one string, if one or two cells got faulty because of certain reason, Narada would replace the faulty cell/(s) instead of whole string.
 - b) Narada will do necessary cell matching process, a replacement battery will be provided to ensure site has backup power. The Warranty battery will then be repaired and used in another instance that requires a replacement or refitted to site.
- 7) The float and equalizing charge voltage setting should be as under:
 - Float charge voltage: 54 to 54.5 V per 48V battery
 - Equalize Charge Voltage: 54 to 54.5 V per 48V battery (Regular boost charge is not required)
 - Maximum Charging Current: 0.5C.
- 8) Narada will not be held responsible for any physical damage, improper installation, handling and damage caused by any disaster

- 9) User must keep and provide the following monthly log to keep the guarantee valid:
- Number of cycles achieved/performed, can be identified on BMS.
 - Depth of Discharge of each cycle, can be identified by the parameter setup on the rectifier.
 - Duration of each cycle, AH drawn and Charging Amps, can be deducted from rectifier records.
 - Ambient and Battery surface temperature, can be deducted from rectifier records and daily temp records.
 - Rectifier log of 30days, will be sufficient.
- 10) For critical warranty issue, Narada reserve right to invest battery operation conditions and make conclusion, buyer must support for site access, local engineer accompany and local transportation for Narada engineers.
- 11) Narada reserve right to reclaim faulty battery/(s) back, and buyer must help to collect faulty battery/(s) to warehouse and keep it.
- 12) If upon initial inspection and installation the battery fails to meet the published performance rating per the latest Narada catalog data at the time of shipment or the user identifies defective in material or workmanship that would impair life or product performance the user will be instructed to hold the battery/(s) pending inspection by a Narada representative, Narada will verify and will repair or replace any defective battery at Narada's option.
- 13) If Seller determines that a Product for which warranty service is claimed is not defective or nonconforming, buyer shall pay or reimburse Seller for all costs of handling, inspecting, testing, disposal, and transportation, and, if applicable, traveling and related expenses.
- 14) Narada Power Source Co., Ltd. shall not have any liability for any incidental or consequential damages.
- 15) This warranty is for **Telkom** project only.

Hangzhou, Oct., 2016

Narada Power Source Co., Ltd.

A handwritten signature in black ink is written over a red circular stamp. The stamp contains the text 'NARADA POWER SOURCE CO., LTD.' in the center, with '浙江' (Zhejiang) at the bottom and '杭州' (Hangzhou) at the top. The stamp also features a star on each side.

Wolson Wu
General Manager
Overseas Market&EPC Projects BU