Base Load Power Hub (BLPH)

SHIPPING, HANDLING AND STORAGE PROCEDURE

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Table of contents

1 OVERVIEW 5

2 COMPONENT CLASSIFICATION 5

2.1 OVERVIEW 5

2.2 "LEVEL A" COMPONENTS 5

2.3 "LEVEL B" COMPONENTS 5

2.4 "LEVEL C" COMPONENTS 5

3 PACKING METHODS 6

3.1 PACKING FOR "LEVEL A" COMPONENTS 6

3.2 PACKING FOR "LEVEL B" COMPONENTS 6

3.3 PACKING FOR "LEVEL C" COMPONENTS 6

4 STORAGE METHODS 7

4.1 STORAGE FOR "LEVEL A" COMPONENTS 7

4.2 STORAGE FOR "LEVEL B" COMPONENTS 7

4.3 STORAGE FOR "LEVEL C" COMPONENTS 7

5 CLASSIFICATION OF THE SYSTEM COMPONENTS 8

5.1 NAVAIDS CENTRAL CONTROL PANEL (*NC-200F2/BC-200F2A/B)* 8

5.2 NAVAIDS BATTERY BREAKER (*CB-200F2*) 8

5.3 NAVAIDS BATTERY BANK (*BA-200F2*) 8

5.4 BATTERY TEMPERATURE PROBE (*ETM-200-01*) 8

5.5 PHOTOCELL SYSTEM (*EPH-200-01*) 9

5.6 VISIBILITY METER (*EVM-200-01*) 9

5.7 MAIN MARINE YELLOW LIGHT 1 (*EML-200-01*) 9

5.8 MAIN MARINE YELLOW LIGHT 2 (*EML-200-02*) 9

5.9 BOAT LANDING STATUS LIGHT (*ESL-200-01*) 9

5.10 MEDIUM INTENSITY AOL 1 (*EOL-200-01)* 10

5.11 MEDIUM INTENSITY AOL 2 (*EOL-200-02)* 10

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5.12 MEDIUM INTENSITY AOL 3 (*EOL-200-03)* 10

5.13 MEDIUM INTENSITY AOL 4 (*EOL-200-04)* 10

6 ANNEX 1 (BATTERY CELLS STORAGE INSTRUCTIONS) 11

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1 OVERVIEW

This manual describes the characteristics and procedures for the packing and the storage of the system components provided by SICE.

2 COMPONENT CLASSIFICATION

2.1 OVERVIEW

Each component is classified accordingly to its sensibility to the environmental conditions and accordingly to its sensibility to the damage during transportation / storage.

2.2 “LEVEL A” COMPONENTS

This level is assigned to the components which are sensitive to environmental conditions during transportation and storage so they require specific protective measures during the packing. Once the specific protective measure are taken during the packing, the component can be treated during the storage like “LEVEL C” components.

2.3 “LEVEL B” COMPONENTS

This level is assigned to the components which are sensitive to environmental conditions during storage so they require specific protective measures during the storage.

2.4 “LEVEL C” COMPONENTS

This level is assigned to the components which are sensitive to environmental conditions but do not require specific protective measures during their packing, transportation and storage (usual good practice must be observed).

3 PACKING METHODS

3.1 PACKING FOR "LEVEL A" COMPONENTS

The main characteristics and construction steps are:

1. Preparation of the wood base of the box.
2. Component edge protection
3. Fixing of component on the bottom base.
4. Closing of the component inside special plastic sack adapt for marine transport and outdoor storage.
5. Fixing of packing list on internal side.
6. Installation of the wood sides and the roof of the box.
7. Marking: shipping marks are normally based on customer rules / specification and must be confirmed by him before shipping. Case codification must be communicated by the customer.

3.2 PACKING FOR "LEVEL B" COMPONENTS

The main characteristics and construction steps are:

1. Preparation of the wood base of the box.
2. Component protection.
3. Fixing of component on the bottom base.
4. Fixing of packing list on internal side.
5. Installation of the wood sides and the roof of the box.
6. Marking: shipping marks are normally based on customer rules / specification and must be confirmed by him before shipping. Case codification must be communicated by the customer.

3.3 PACKING FOR "LEVEL C" COMPONENTS

Same of "level B" packing described above.

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4 STORAGE METHODS

4.1 STORAGE FOR "LEVEL A" COMPONENTS

The packing of the component is made in order to allow the storage of the component outdoor at the following conditions:

Min temperature: -20°C

Max. temperature: +50°C

Storage max duration: 18 months (Indoor)

12 months (Outdoor)

NOTE: The equipment is paked in such a manner that keep the original condition last up to 18 months in humid conditions without corrosion or damage from fungus attack, only if it is stored indoor.

4.2 STORAGE FOR "LEVEL B" COMPONENTS

The "LEVEL B" components must be stored indoor (in ventilated premises) and actions on the component are required accordingly to the manufacturer instructions (see ANNEX 1 of this document).

4.3 STORAGE FOR "LEVEL C" COMPONENTS

Same of "level A" storage described above.

5 CLASSIFICATION OF THE SYSTEM COMPONENTS

The system components are classified in the following way:

5.1 NAVAIDS CENTRAL CONTROL PANEL (*NC-200F2/BC-200F2A/B)*

The panel is suitable for indoor/outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.2 NAVAIDS BATTERY BREAKER (*CB-200F2*)

The enclosure is suitable for indoor/outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.3 NAVAIDS BATTERY BANK (*BA-200F2*)

The battery cells are sensitive to the environmental conditions and actions on the cells are required during the storage so they're classified as "**LEVEL B**" component: they must be stored indoor and the instructions, given by their manufacturer, must be followed. See the ANNEX 1 for detailed information given by the battery manufacturer about the storage procedure.

5.4 BATTERY TEMPERATURE PROBE (*ETM-200-01*)

The temperature probe is suitable for indoor/outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.5 PHOTOCELL SYSTEM (*EPH-200-01*)

The enclosure is suitable for outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.6 VISIBILITY METER (*EVM-200-01*)

The component is suitable for outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.7 MAIN MARINE YELLOW LIGHT 1 (*EML-200-01*)

The component is suitable for outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.8 MAIN MARINE YELLOW LIGHT 2 (*EML-200-02*)

The component is suitable for outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.9 BOAT LANDING STATUS LIGHT (*ESL-200-01*)

The component is suitable for outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.10 MEDIUM INTENSITY AOL 1 (*EOL-200-01)*

The component is suitable for outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.11 MEDIUM INTENSITY AOL 2 (*EOL-200-02)*

The component is suitable for outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.12 MEDIUM INTENSITY AOL 3 (*EOL-200-03)*

The component is suitable for outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

5.13 MEDIUM INTENSITY AOL 4 (*EOL-200-04)*

The component is suitable for outdoor installation therefore, even if inside it are installed electric/electronic components that are sensitive to the environmental conditions, it's classified as "**LEVEL C**" component and so it's packed and it must be stored accordingly to this classification.

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6 ANNEX 1 (BATTERY CELLS STORAGE INSTRUCTIONS)

UNPACKING

Inspection

Upon receiving a shipment, of battery cells, it is advisable to open the shipping containers and carefully check the cells and hardware against the packing list. The contents of each consignment are carefully inspected by FIAMM before shipment. Any damage must be reported immediately to the carrier and the damaged items retained for inspection by the carrier's representative.

Handling

Monolite units are shipped fully charged and must be treated with care at all times. The product is capable of supplying high short circuit currents, even if the case or lid are damaged. Always lift the individual unit from underneath, or by the build-in-lifting handles. Never apply force to, or drop anything on, the terminal posts: doing so may damage the threads or the post seals.

STORAGE

Storage prior to installation

VRLA batteries range are delivered activated/filled and charged ready for installation. If they cannot be installed immediately, the following instructions need to be respected.

Storage Conditions

A good storage practice requires as follows:

- Battery storage area has to be clean, cool and dry.
- Surroundings have to be kept clean.
- Elevated temperatures, direct and indirect sunshine have to be avoided.
- Optimum storage temperature range is -10°C to +30°C.
- Avoid storage in ambient with a relative humidity greater than 90%.
- Battery cells must be protected from harsh weather, moisture and flooding.
- Storage on a pallet wrapped in plastic material is permitted, in principle. However, it is not recommended in rooms where temperature fluctuates significantly, or if high relative humidity can cause condensation under the plastic cover.
- With time, this condensation can cause a whitish hydration on the poles and lead to high self-discharge by leakage current.
- Atmospheres with chemical contaminants have to avoid.
- Do not load other merchandise on top of unprotected batteries.
- Battery cells must be protected from dropping objects, from falling down and falling over.
- Battery cells must be protected from short-circuits by metallic parts or conductive contaminations.
- Avoid storing of unpacked battery cells on sharp-edged supports.
- Stacking of pallets is not permitted unless otherwise specified.
- It is recommended to realize the same storage conditions within a batch, pallet or room.

Storage time / Temperature

- VRLA battery ranges have a shelf life of **6 months** at a storage temperature of 20°C.
- The temperature has an impact on the self-discharge rate of battery cells.
- Higher temperatures increase the rate of self discharge and therefore storage life is reduced.
- FIAMM Gel batteries have a self discharge rate of ≤ 2% per month at 20°C and therefore are stored for prolonged periods of time.
- MAXIMUM storage period before refresh at the given average storage ambient temperature is as follows :

6 months at 20°C
4 months at 30°C
2 months at 40°C

Storage / Recharge

- As during storage batteries will lose part of their capacity due to self discharge (≤ 2% per month at 20°C), a refreshing charge must be given :
  1) when MAXIMUM STORAGE TIME is reached
     OR
  2) when the OCV (open circuit voltage) approaches 2,11Volts/cell

whichever occurs first.

Recharge the cells as directed in FIAMM'S instruction table for Gel battery type. (Usually at 2.4 volt per cell for a period of 24 hours at 20°C).

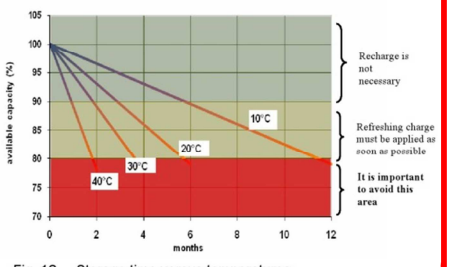


Fig. 12 Storage time versus temperatures.

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