



## UPS (Uninterruptible Power Supply Unit)

Project: COSCO (Dalian) Shipyard Co., Ltd.  
Hull No. N450

Client: Santak Electronic (Shenzhen) Co., Ltd.

Office: Guangzhou

Client's Order Number: -

Date: 13 May 2016

Order Status: Complete

Inspection Dates

First: 25 January 2016

Final: 26 January 2016

This certificate is issued to the above client to certify that the an UPS (Uninterruptible Power Supply) listed herein has been examined at the client's premises of No. 8, Baoshi Road, Block 72, Baoan, Shenzhen, 518101, P. R. China as follows:

### Equipment Particulars

Name: One (1) - 9EHD33/100KVA AC UPS  
(Inclusive UPS cabinet, By-pass cabinet and Distribution cabinet)

Type: 9EHD-33 100KVA, Icc:10KA  
Drawing No.: 9EHD33/100KVA AC UPS, Rev. 12  
IP Code: IP32  
Operating Temperature: 40°C (max.)  
CSB App: Rev. 1.02.0007  
CSB Bootloader: Rev. 1.00.0001  
UPM App: Rev. 1.02.0021  
UPM Bootloader: Rev. 1.00.0000  
UPM PLD: Rev. 1.02.0000

#### UPS Cabinet-

Input: AC400V, 3Ø+N+PE, 60Hz, 153A, 100KVA  
Bypass: AC230V, 3Ø+PE, 60Hz, 251A, 100KVA  
Output: AC230V, 3Ø+PE, 60Hz, 251A, 100KVA/90KW  
Battery: DC384V, 256A (see Remark)  
Serial Number: 4K044LXX28

#### TX (Distribution) Cabinet-

Input Transformer:  
Input: AC440V, 3Ø+PE, 60Hz, 143A, 100KVA  
Output: AC400V, 3Ø+N+PE, 60Hz, 153A, 100KVA  
Output Transformer:  
Input: AC400V, 3Ø+N+PE, 60Hz, 144A, 100KVA  
Output: AC230V, 3Ø+PE, 60Hz, 251A, 100KVA  
Serial Number: 4K044LXX26

#### Bypass Cabinet-

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Main Input: AC440V, 3Ø+PE, 60Hz, 143A, 100KVA  
Output: AC230V, 3Ø+PE, 60Hz, 251A, 100KVA  
Bypass: AC440V, 3Ø+PE, 60Hz, 143A, 100KVA  
Bypass Output: AC230V, 3Ø+PE, 60Hz, 251A, 100KVA  
Serial Number: 4K044LXX30

#### Applicable Standard

1. LR Rules and Regulations for the Classification of Ships, July 2014, Part 6, Chapters 1 & 2, including Notices Nos. 1 & 2

#### Scope of Examination

The Following testing and inspections were carried out:

1. Approved document, DAD STS/ETS/303265, issue number 0, dated 15 December 2015
2. The UPS was visually inspection and seen constructed in accordance with the maker's plans covers-  
(1) Main components (parts) data verification  
(2) Appearance and interior wiring inspection
3. Insulation resistance measurement before and after dielectric strength test
4. Dielectric strength test at AC 2000V in one minute
5. Performance test  
(1) light-load test  
(2) UPS auxiliary device test  
(3) AC input failure test  
(4) AC input restoring test  
(5) Bypass test
6. Full-load test.
7. Alarm and signal test
8. Ventilation function test
9. Temperature rise test
10. Testing instrument found duly calibrated with traceable calibration certificate(s)

For identification purposes, a nameplate with following hard stamp has been fitted on the board:

LR GZU1620603/1 to GZU1620603/3  
2016.01 MYW



#### Conclusion

Based on the above examinations, the equipment has been found to comply with applicable requirements of the standard listed above.

#### Remarks:

1. On board Installation and function test including battery capacity test is subject to the satisfaction of the attending surveyor
2. Battery (and or battery cabinet) is not inclusive by this certificate



M. Y. Wu  
Surveyor to Lloyd's Register Classification Society (China) Co., Ltd.

a member of the Lloyd's Register group.





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Order Status: Complete

Inspection Dates

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Operating Temperature: 40°C (max.)  
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UPM Bootloader: Rev. 1.00.0000  
UPM PLD: Rev. 1.02.0000

#### UPS Cabinet-

Input: AC400V, 3Ø+N+PE, 60Hz, 153A, 100KVA  
Bypass: AC230V, 3Ø+PE, 60Hz, 251A, 100KVA  
Output: AC230V, 3Ø+PE, 60Hz, 251A, 100KVA/90KW  
Battery: DC384V, 256A (see Remark)  
Serial Number: 4K044LXX29

#### TX (Distribution) Cabinet-

Input Transformer:  
Input: AC440V, 3Ø+PE, 60Hz, 143A, 100KVA  
Output: AC400V, 3Ø+N+PE, 60Hz, 153A, 100KVA  
Output Transformer:  
Input: AC400V, 3Ø+N+PE, 60Hz, 144A, 100KVA  
Output: AC230V, 3Ø+PE, 60Hz, 251A, 100KVA  
Serial Number: 4K044LXX27

#### Bypass Cabinet-

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Main Input: AC440V, 3Ø+PE, 60Hz, 143A, 100KVA  
Output: AC230V, 3Ø+PE, 60Hz, 251A, 100KVA  
Bypass: AC440V, 3Ø+PE, 60Hz, 143A, 100KVA  
Bypass Output: AC230V, 3Ø+PE, 60Hz, 251A, 100KVA  
Serial Number: 4K044LXX31

#### Applicable Standard

1. LR Rules and Regulations for the Classification of Ships, July 2014, Part 6, Chapters 1 & 2, including Notices Nos. 1 & 2

#### Scope of Examination

The Following testing and inspections were carried out:

1. Approved document, DAD STS/ETS/303265, issue number 0, dated 15 December 2015
2. The UPS was visually inspection and seen constructed in accordance with the maker's plans covers-
  - (1) Main components (parts) data verification
  - (2) Appearance and interior wiring inspection
3. Insulation resistance measurement before and after dielectric strength test
4. Dielectric strength test at AC 2000V in one minute
5. Performance test
  - (1) light-load test
  - (2) UPS auxiliary device test
  - (3) AC input failure test
  - (4) AC input restoring test
  - (5) Bypass test
6. Full-load test.
7. Alarm and signal test
8. Ventilation function test
9. Temperature rise test
10. Testing instrument found duly calibrated with traceable calibration certificate(s)

For identification purposes, a nameplate with following hard stamp has been fitted on the board:

LR GZU1620603/4 to GZU1620603/6  
2016.01 MYW



#### Conclusion

Based on the above examinations, the equipment has been found to comply with applicable requirements of the standard listed above.

#### Remarks:

1. On board Installation and function test including battery capacity test is subject to the satisfaction of the attending surveyor
2. Battery (and or battery cabinet) is not inclusive by this certificate



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