

TYPE APPROVAL CERTIFICATE

This is to certify:

That the UPS

with type designation(s)
Galaxy VM

Issued to

Schneider Electric IT Denmark ApS
Kolding, Denmark

is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :

UPS for use in ships and offshore units.

This Certificate is valid until **2019-06-30**.

Issued at **Høvik** on **2015-02-12**

DNV GL local station: **Fredericia**

Approval Engineer: **Nicolay Horn**

for **DNV GL**

Marit Laumann
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Certificate No: **E-13909**
 File No: **822.60**
 Job Id: **262.1-018244-1**

Name and name of manufacturer

American Power Conversion
 Jingani, Anekal Taluk, Bengaluru
 Bangalore -India

Product description

Galaxy VM: UPS for general emergency equipment. Equipped with battery charger and automatic by-pass.

| | | |
|---------------------------------|---|-----|
| Rating kVA PF = 0.9 | 160 | 200 |
| Input | | |
| Nominal input Voltage | 3 ph 380/400/415V | |
| Voltage range | 320V - 600 V (Max. 1 minute above 480 V) | |
| Input and Bypass | Separate or common | |
| Frequency | 40-70Hz | |
| EMC (immunity) | IEC62040-2 class C2/C3 | |
| Bypass | | |
| Nominal input voltage | 3 Ph+PE or 3 ph+N+PE 380/400/415V | |
| Voltage range | 342V to 457V | |
| Frequency | 50 / 60 Hz \pm 8 % | |
| EMC (immunity) | IEC62040-2 class C2/C3 | |
| Output | | |
| Output voltage | 3 Ph+PE or 3 ph +N+PE 380/400/415V \pm 3 % | |
| Voltage regulation | \pm 1 % | |
| Frequency | 50 / 60 Hz | |
| Over load | 150% in 1 min., 125% in 10 min (normal operation) | |
| Output total TDHU | < 2 %@linear, < 3%@non-linear | |
| Max load crest factor | Unlimited | |
| EMC (emission) | IEC62040-2 class C2 | |
| Batteries | | |
| Charge capacity | 40% charge at 80% load, 20% charge at 100% load | |
| Nominal voltage | 480Vdc | |
| Type | Lead Acid | |
| Overall efficiency | | |
| Double conversion mode | 96.2% at 75% load | |
| Economy mode | 99.2% at 75% load | |
| Environmental conditions | | |
| Storage temperature | - 25°C to + 45 °C | |
| Operating temperature | Up to 40°C * | |
| Dimensions | | |
| Overall dimensions (hwxwd) | 1970 x 1052 x 865 mm (without batteries) | |

* Output to be derated for environmental temperatures up to 45 °C. See Application / limitation

| Classification according to DNV Sfc 2.4 | |
|--|----|
| Temperature class | A |
| Vibration class | A |
| Humidity class | A |
| Enclosure class | A* |
| EMC class | A* |

* See "Application / limitation" for restrictions / limitations

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Application/Limitation

Operation for longer periods in 40-45°C ambient requires de-rating of the products nominal load with 2.5%/°C > 40°C.

End user responsible for correct enclosure protection (IP) wrt. to location.

This type approval can not replace the requirement for a product certificates in accordance with the DNV Rule paragraph Pt.4, Ch.8, Sec. 1, B303.

Converters with EMC classed C2 or C3 according to IEC 62040-2 can be installed in "special distribution zone" and "general power distribution zone" in accordance with IEC 60533 provided precautions are taken to attenuate these effects on the distribution system, so the safe operation is assured.

To be installed in climatic controlled areas.

Type Approval documentation

Technical info :

Galaxy VM 160-200 kVA 400V Technical Specification

Drawings:

GVMPB160KHS, rev. 0, GVMPB200KHS, rev. 0 GVMSB160KHS, rev. 0, GVMSB200KHS, rev. 0 issued 2014-05-22.

Test Reports:

TÜV report no. 478617089 issued 2014-10-20. DELTA EMC Test reports nos. DANAK-10/13652 rev A dated 2014-07-14, CEM_MG_03 dated 2005-12-19/23.

Environnetech report no. RENV-ENN-14-400489/A (00) dated 2014-06-25. TÜV report no. 21122204_001 dated 2006-09-08. UL test report no. 4786612469 issued 2014-10-23.

Tests carried out

Type tests in accordance with IEC 62040-1, EMC immunity in Accordance with DNV Standard for Certification No. 2.4, EMC emission in Accordance with IEC 62040-2 class C2, Vibration, Damp heat in accordance with DNV Class A (no condensation), Dry heat in accordance with DNV Class A.

Marking of product

Schneider Electric – Galaxy VM – technical data

Periodical assessment

The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Survey to be performed at least every second year.

END OF CERTIFICATE