DNV·GL

Certificate No:
TAA00001YD

TYPE APPROVAL CERTIFICATE

This is to certify:

That the DC Power Supply

with type designation(s)
STEP-PS/1AC

Issued to
PHOENIX TESTLAB GmbH
BLOMBERG LIPPE, Germany

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Location classes	
Temperature	**D**
Humidity	**B**
Vibration	**C/A***
EMC	**B**
Enclosure	**Required protection according to the Rules shall be provided upon installation on board.**

*** see Application/Limitation**

Issued at **Hamburg** on **2018-08-28**
This Certificate is valid until **2023-08-23**.
DNV GL local station: **Essen**

for **DNV GL**

Approval Engineer: **Heinz Scheffler**

Joannis Papanuskas
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.

Job Id: **262.1-029232-1**
Certificate No: **TAA00001YD**

Product description

DIN rail power supply unit, primary switched-mode, 1-phase:

- Redundant circuits are suitable for the supply of systems which make especially high requirements on the operational safety.
- For n parallel connected devices, the output current can be increased to n x IN.
- Input nominal voltage range: 100V AC ... 240V AC
- Nominal output voltage (depending on type): 5V DC, 12V DC, 15V DC, 24V DC, 48V DC (±1%)
- Output current (depending on type): 0.75A / 1.5A / 1.75A / 2A / 2.5A / 3A / 3.8A / 4A / 4.2A / 5A / 6.5A (-25°C…70°C)
- Material Name:
  2868635: STEP-PS/1AC/24DC/0.75
  2868648: STEP-PS/1AC/24DC/1.75
  2688651: STEP-PS/1AC/24DC/2.5
  2868664: STEP-PS/1AC/24DC/4.2
  2868567: STEP-PS/1AC/12DC/1.5
  2868570: STEP-PS/1AC/12DC/3
  2868583: STEP-PS/1AC/12DC/5
  2868541: STEP-PS/1AC/5DC/6.5
  2868619: STEP-PS/1AC/15DC/4
  2868680: STEP-PS/1AC/48DC/2
  2868677: STEP-PS/1AC/24DC/3.8/C2LPS (for NEC Class2 applications)
  2868622: STEP-PS/1AC/24DC/0.75/FL (43mm contructional depth)
  2868635: STEP-PS/1AC/12DC/1.5/FL (43mm contructional depth)

Application/Limitation

Location class Vibration A:

- STEP-PS/1AC/24DC/4.2
- STEP-PS/1AC/12DC/1.57FL
- STEP-PS/1AC/24DC/0.75/FL
- STEP-PS/1AC/24DC/3.8/C2LPS

Temperature-dependent derating: At ambient temperatures above +55 °C, the output power must be decreased by 2.5 % per Kelvin increase in temperature.

The Type Approval covers hardware listed under Product description. When the hardware is used in applications to be classed by DNV GL, documentation for the actual application is to be submitted for approval by the manufacturer of the application system in each case.
Reference is made to DNV GL Rules for Ships Pt.4 Ch.9 Control and Monitoring Systems.

Type Approval documentation

Test Reports: E70300B, E70313B 2ndversion ,U72596h, U72596i, E080180E2, E080181E2, E080182E2; E080183E2, U081212E1, U081220E1, U090131E1, U090131E2, U090131E3, U110377E1 2ndversion; Performance Test M5-M8

Documents: de_step_ps_1ac_15dc_4_103731_en_02; db_en_step_ps_1ac_5dc_6_5_103730_en_01; db_en_step_ps_1ac_12dc_1_5_103505_en_04; db_en_step_ps_1ac_12dc_1_5_fl_104123_en_03; db_en_step_ps_1ac_12dc_3_103507_en_01; db_en_step_ps_1ac_12dc_5_103504_en_02; db_en_step_ps_1ac_24dc_0_75_103297_en_04; db_en_step_ps_1ac_24dc_0_75_fl_103898_en_02; db_en_step_ps_1ac_24dc_1_75_103506_en_01; db_en_step_ps_1ac_24dc_2_5_103298_en_01; db_en_step_ps_1ac_24dc_3_8_c2lps_103968_en_00; db_en_step_ps_1ac_24dc_4_2_103508_en_01; db_en_step_ps_1ac_48dc_2_103732_en_02

Tests carried out

Applicable tests according to class guideline DNVGL-CG-0339, November 2016.

Marking of product

The products to be marked with:

- Model name
- Manufacturer name
- Serial number

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the type are complied with, and that no alterations are made to the product design or choice of systems, software versions, components and/or materials.
The main elements of the assessment are:

- Ensure that type approved documentation is available
- Inspection of factory samples, selected at random from the production line (where practicable)
- Review of production and inspection routines, including test records from product sample tests and control routines
- Ensuring that systems, software versions, components and/or materials used comply with type approved documents and/or referenced system, software, component and material specifications
- Review of possible changes in design of systems, software versions, components, materials and/or performance, and make sure that such changes do not affect the type approval given
- Ensuring traceability between manufacturer's product type marking and the type approval certificate

Periodical assessment is to be performed after 2 years and after 3.5 years. A renewal assessment will be performed at renewal of the certificate.

END OF CERTIFICATE