DNV·GL

Certificate No:
TAE000001H

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Constant Voltage Charger

with type designation(s)
CPS

Issued to
Eltek AS
DRAMMEN, Norway

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

Application :

For use in control rooms and dry accomodation areas onboard ships and offshore units.

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

Voltage output	**24 - 220 V DC**
Power	**8.0 - 58.8 kW**
Temperature class	**A**
Vibration class	**A**
Humidity class	**A**
Enclosure class	**A**

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2015-09-02**

for **DNV GL**

DNV GL local station: **Oslo**

Approval Engineer: **Nicolay Horn**

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.

Job Id:
Certificate No: **TAE000001H**

Name and place of manufacturer's

ELTEK TECHNOLOGY (DONGGUAN) LTD
GUANCHENG SCIENCE & TECHNOLOGY PARK
GUANGCHENG RD SEC, SHILONG RD
DONGGUAN, GUANGDONG 523000 CHINA

VTECH COMMUNICATIONS LTD CMS DIV
XIA LING BEI MANAGEMENT ZONE
LIAO BU DISTRICT
DONGGUAN, GUANGDONG 523411 CHINA

ELTEK S R O
PALENICA 53/79
033 17 LIPTOVSKY HRADOK
SLOVAK REPUBLIC

Product description

CPS Central 24 V DC and 220 V DC systems for different applications. The TA includes single components power supply (PS), power rack (PR), controller and power systems, with battery.

Type designation	**Input voltage** (VAC)	**Output voltage** (VDC)	**Output Power** (kW)
FP2 220V 48kW 2x3PH230VAC CPS 3PH230VAC	2x3ph 230V AC	178.5-297V	58.8kW (max)
Batt.cabinet CPS 4sh 38U	178.5 – 297.Vdc	216 V DC	-
FP2 24V 48kW 2x3PH220VAC BCE	2x3ph230V AC	21.6-36V DC	48kW (max)
FPS 24V 8kW 2x220VDC 28x2P	2x100-250 V AC / 2x85-300 V DC	21.5-29 V DC	8kW (max)
FPS 24V 8kW 2x220V DC	2x100-250V AC / 2x85-300 V DC	21.5-29 V DC	8kW (max)
Batt.cabinet 1sh 12U 2x125A	2x21.5-29V DC	24V DC	-

Equipment /capacity	**Size** (HxWxD**)**	**IP Degree**	**Eltek Partnumber**
2x250A battbreaker 2x250A loadbreaker	1800x800x600	IP43	C22438.400
18x 12V /190 Ah 250A battbreaker	1800x800x600	IP43	BE01138.000
2x1200 A batt 2x1200 A load	1800x800x600	IP43	C22438.401
6x6A load, 5x10A load, 6x16A load	1200x600x600	IP44	CS0825.000
5x10A load	760x600x350	!P44	CS0816.000
Max bat cap.: 2x24V/ 120Ah (2x60Ah)	600x600x350	IP44	BB0212.000

The row with Eltek part number in the second table corresponds with the same row in the first table.

Application/Limitation

For installation in control rooms and dry accommodation spaces on board ships and mobile offshore units.

The products type approved as listed above have been improved to withstand marine environments.

"The power systems and the individual items as listed above can operate at full load with an ambient temperature of 45°C – 60°C, depending of rectifier. After maximum ambient is achieved the output power will derate up to 75°C until the rectifier shuts down." The derating is approx. 20-33W/°C depending of type of rectifier. See manufacturer specification for details.

Type Approval documentation

Tests carried out

Type / safety tests in accordance with IEC 60950-1. Dry heat test, damp heattest, vibration test, EMC tests, input supply tests (voltage dips, short interruptions and voltage variation), high voltage test and insulation resistance.

Marking of product

Model number - input voltage - output voltage - maximum current.

Periodical assessment

The scope of the periodical assessment 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)
- 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.

Assessment to be performed at least every second year.

END OF CERTIFICATE