

TYPE APPROVAL CERTIFICATE

This is to certify:

That the **Battery charger**

with type designation(s)
SUPREME PRO

Issued to

WhisperPower B.V.
Drachten, Netherlands

is found to comply with

DNV rules for classification – Ships, offshore units, and high speed and light craft

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV.

Voltage output	24V DC
Power	up to 3375 VA
Temperature class	B
Vibration class	A
Humidity class	B
Degree of protection	A

Issued at **Høvik** on **2022-02-15**

This Certificate is valid until **2027-02-14**.

DNV local station: **Netherlands FIS**

for **DNV**

Approval Engineer: **Nicolay Horn**

Trond Sjøvåg
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Name and place of manufacturer

Delta Electronics, Inc.
3 Tungyuan Road, Chungli Industrial Zone,
Taoyuan City 32063 Taiwan

Product description

Supreme Pro: Battery charger for general equipment.

Model	24/40-3		24/60-3	24/80-3	24/100-3
Rating	1.4 kVA / 1.27 kW		2 kVA / 1.8 kW	2.7 kVA / 2.467 kW	3.375 kVA / 3.1 kW
Input					
Nominal Voltage (V)	120 / 230				
Voltage range	90 – 265 V				
Frequency (Hz)	45 - 65				
Power factor	0.97				
Output					
Output voltage (V)	24				
Frequency (Hz)	DC				
Total charge current	40A / 28.8V / 120Vac 40A / 28.8V / 230Vac	45A / 28.8V / 120Vac 60A / 28.8V / 230Vac	44A / 28.8V / 120Vac 80A / 28.8V / 230Vac	55A / 28.8V / 120Vac 100A / 28.8V / 230Vac	
Number of battery outlets	3				
Charge current	6A ±1A (outputs 2 and 3)				
Charge characteristics	IUoUo, automatic / 3-step for GEL/AGM/wet/lead acid batteries				
Max. Absobtion time	4 hours				
Min. Absobtion time	15 minutes				
Battery capacity (recommendation)	100-500Ah	150-750Ah	300-800Ah	400-1500Ah	
Environmental conditions					
Operating temperature	-25 to +60°C (Max. temperature 40°C at 100% load, 40°C - 60°C max. output is 50% load at 60°C, below 0°C max output current is 10% load				
Relative humanity	5 to 96 %				
Dimensions					
Overall dimensions (HxWxD) mm	445 x 210 x 145				

Classification according to DNV GL-CG-0339	
Temperature class	B
Vibration class	A
Humidity class	B
Enclosure class	A
EMC class	B

Application/Limitation

End user is responsible for correct enclosure protection (IP) with respect to location.

(Degree of protection for Charger is IP-23, EMC Filter is IP-21)

Type Approval documentation

Tests carried out

Type tests in accordance with IEC 60335-1 & 2-29 and IEC 62368. EMC (Class B), Vibration, Damp heat (Class B) and Dry heat (Class B) in accordance with DNV-CG-0339 August 2021.

Marking of product

WisperPower – Supreme Pro – technical data

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 periodical assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routines (RT) checked (if not available tests, 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.

Periodical assessment shall be performed at 2 and 3.5 year and at renewal.

END OF CERTIFICATE