



# 140 KW SUBMARINE SHORE SUPPLY MODEL NO. 2065

**The 140 kW DC shore supply model 2065 was developed for the supply of a conventional submarine. Input supply can be either conventional 400V, 3ph, 50 Hz when using a land based shore grid, or 440 V, 3 ph, 60 Hz (in accordance with STANAG 1008 Ed. 9) when operated from a surface vessel using the respective board supply.**

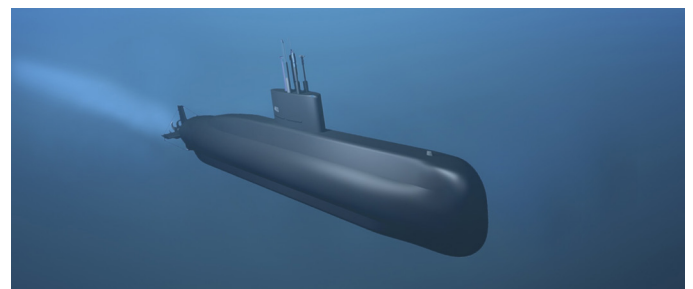
The complete design of the shore supply system is highly modular, allowing a tailor-made solution in terms of output voltage and current to the specific characteristics of the submarine class.

A rectifier with controller is used and allows to program the output.

Current limiting can be programmed between 5% of  $I_{nom}$  and the maximum rated current of 300 A.

The mechanical layout is primarily a 10 feet steel container with integrated switch cabinets for the charging station. A cooling system is mounted on the container walls and is removable for transportation in order to meet the customer requirement of 10 ft size.

The container can be certified with a CSC safety approval, allowing a comfortable transportation on sea.



## General Features

- Modular system
- Customised configurations
- Programmable output
- Local control, control via Remote Control Box or LAN
- High efficiency
- Integrated cooling system
- Monitoring system integrated
- Built-in test
- 15 years support



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## Mains Supply

Voltage ..... 3 x 400/230 V  
Voltage tolerance .....  $\pm 10\%$   
Frequency ..... 50 Hz  
Frequency tolerance .....  $\pm 5\%$   
Current ..... 3 x 300 A  
Power factor ..... 0.6 to 0.9 dependent on voltage  
Total Harmonic Distortion Current .....  $\leq 12\%$  dependent on voltage, current and mains

## Auxiliary Voltage Supply

Voltage ..... 1 x 230 V  
Voltage tolerance .....  $\pm 10\%$   
Frequency ..... 50 Hz  
Frequency tolerance .....  $\pm 5\%$   
Current ..... 16 A

## Output

Power ..... 140 kW max.  
Current ..... 250 A  
Current tolerance .....  $\pm 1\%$  static  
Voltage ..... 360V to 560 VDC,  
in steps of  $\pm 1V$  and  $\pm 5V$   
Voltage tolerance .....  $\pm 1\%$  static  
Ripple .....  $\leq 1.5\%$  rms

Current tolerance .....  $\pm 1\%$  static  
Dynamic deviation ..... load step 10% to 100 %  $\leq -9\%$  /  $\leq +5\%$   
load step 100% to 10 %  $\leq +5\%$   
Recovery time ..... load step 10% to 100 %  $\leq 50$  ms  
load step 100% to 10 %  $\leq 300$  ms

## General

Operation mode ..... Continuous operation  
Classification ..... DIN, VDE, ICE, DNV GL  
Power losses ..... 15 kW  
Efficiency ..... Approx. 94% at full load  
Protection class ..... I  
Isolation .....  $> 100$  M $\Omega$  at 500 V  
Isolation range  
measured value ..... 1 k $\Omega$ ...10 M $\Omega$   
Degree of protection ..... IP 54 for transportation and storage,  
IP 23 during operation  
Ambient temperature ...  $-20^{\circ}\text{C}$  to  $+50^{\circ}\text{C}$   
(without condensation) for operation  
Corrosivity category  
outside ..... C5-M  
Dimensions L x W x H  
10 feet container ..... 2991 x 2438 x 2591 mm  
Weight ..... approx. 4000 kg