



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 % ≤ 50 ms
 load step 100% to 10 % ≤ 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 Ω at 500 V
 Isolation range measured value 1 k Ω ...10 M Ω
 Degree of protection IP 54 for transportation and storage,
 IP 23 during operation
 Ambient temperature ... -20°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