Onshore charging station «Bereza» series

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Description

Onshore charging station «Bereza» is intended to charge drive batteries of the vessels with the electric propulsion systems. «Bereza» ensures controlled charge with limited maximum current and voltage according to signals from the battery control system, and protects the electric equipment by the controlled variable.

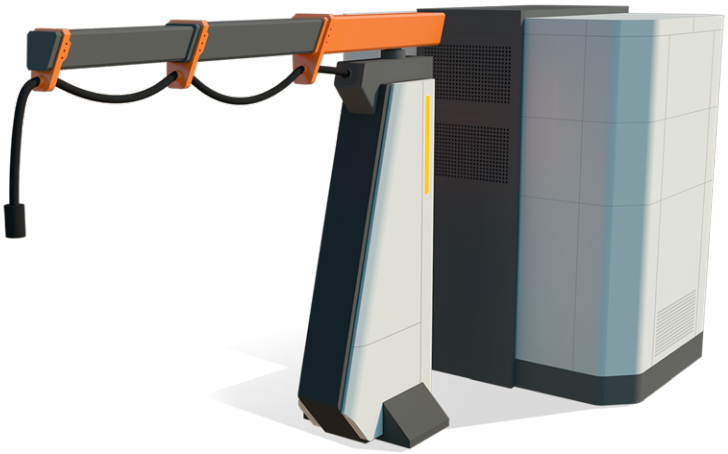
The station is a step-up active rectifier based on high-power IGBT transistors.

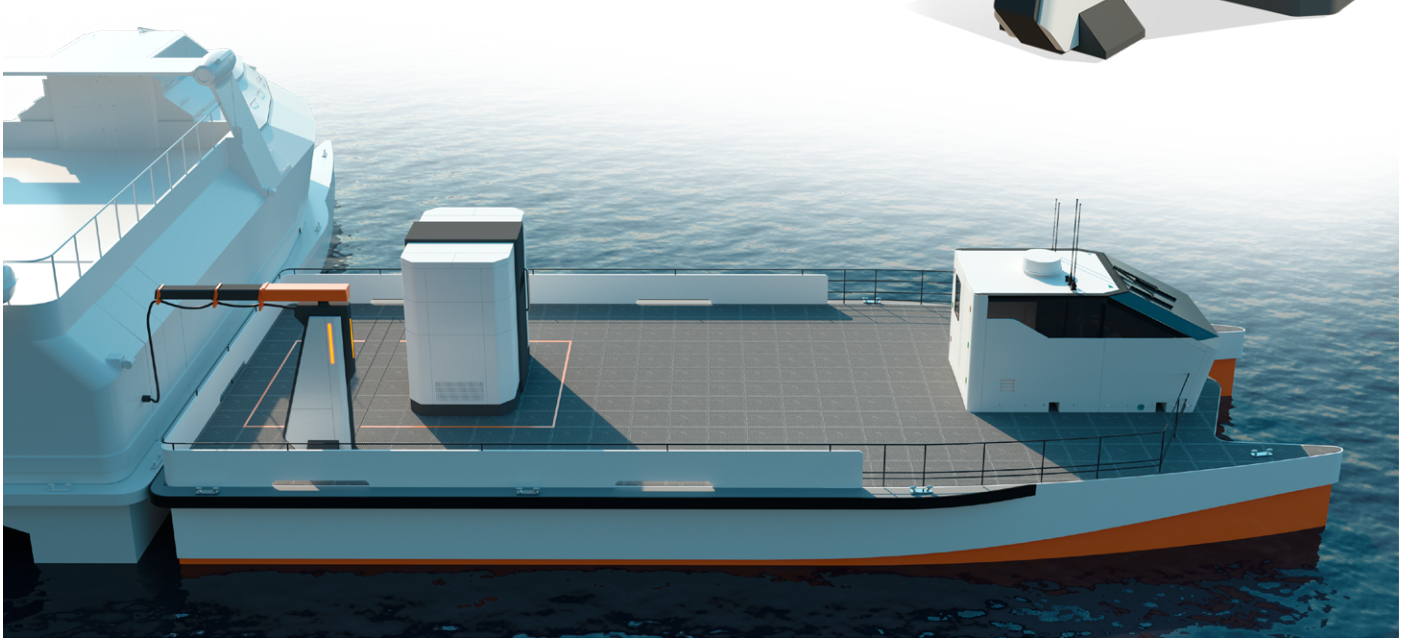
Highly resistant to harsh environmental conditions and temperature cycling, the SEMIKRON power converter assemblies are used as transistors.

The charging station microcontrollers are based on up-to-date processor with 180 mln. flops performance. The control system maintains high quality of pre-set voltage and current with accuracy up to 0.5 %.

Control system ensures the following charge types:

- with voltage regulation;
- with current regulation;
- with charge power regulation.





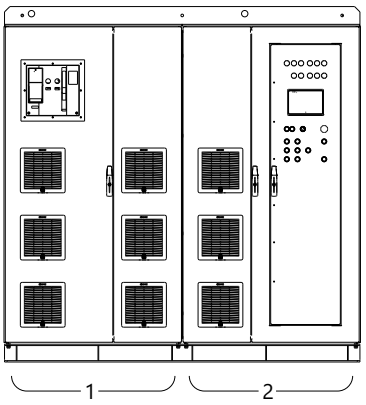
Brief specifications

Input power supply	3x380 V, 50Hz
IP rating	IP22
Cooling type	Air
Output voltage DC	Up to 900 V
Output current	200 - 1400 A
Interface	Bluetooth / Wi-Fi

Features

The charging station operates together with the ship control systems via Bluetooth interface. The software ensures remote connection of the feeder when a ship is approaching the pierce, and performs in-depth diagnostics of the electric power system. Non-volatile error and failure history enables to perform the diagnostics.

Universal design of the charging station enables to create on its basis the mobile floating charging station type «Bereza-M». It is located on the self-propelled floating facility equipped with energy storages or gas-operated electric generator.

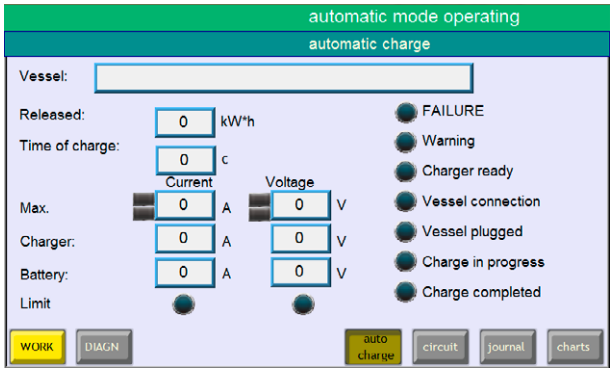


The charging station consists of two sections:

1. The input section is in charge of power input, switching and power supply to secondary users, and protection of the internal devices against short circuit. This section includes: the voltage control relay, automatic switch, input filters, voltage sensors, and other equipment;

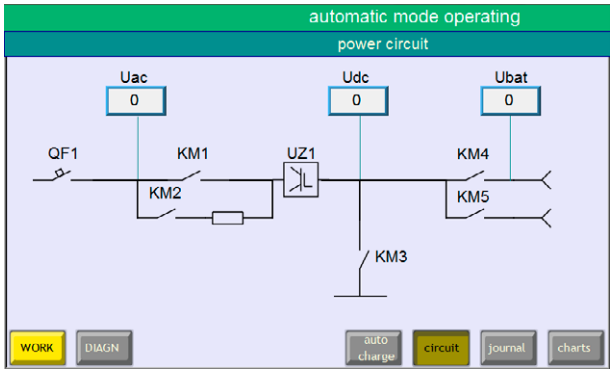
2. The conversion section ensures rectification, generation of the required voltage level, current limitation by set point, charge station control from the local control panel, compatibility with peripheral units and ship systems. This section consists of: the controlled rectifier, DC link, output filters, switching equipment, and control system.

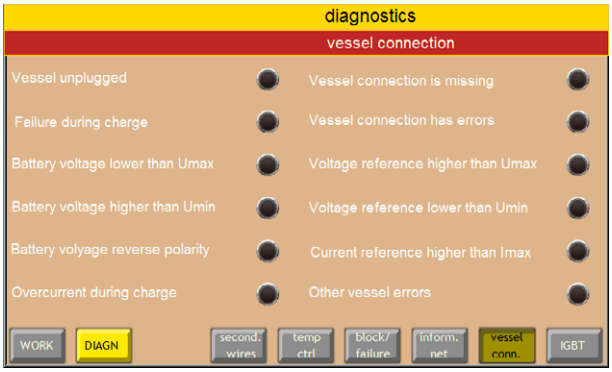
Interface screen

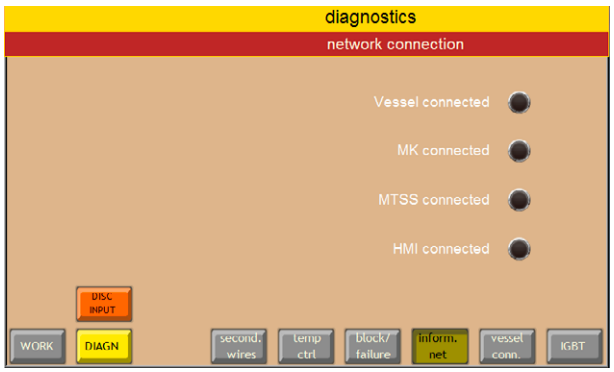


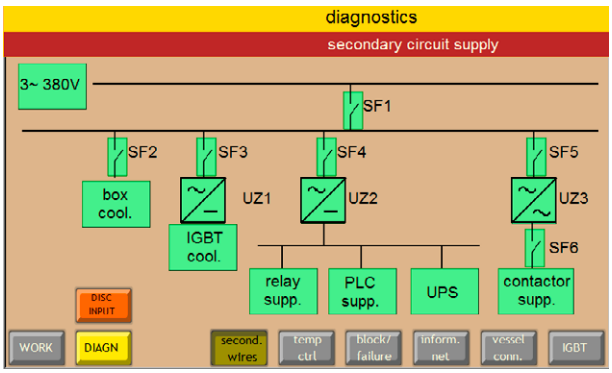
The main screen displays key information on the charge: charge time, amount of supplied electricity, current and voltage set points, and their current values, vessel identifier, system status overview.

Additional screens enable to perform in-depth diagnostics of the electric equipment: a position of the power contactors, cooling system status, and warning or alarm notifications.









Approved by Russian Maritime Register of Shipping

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