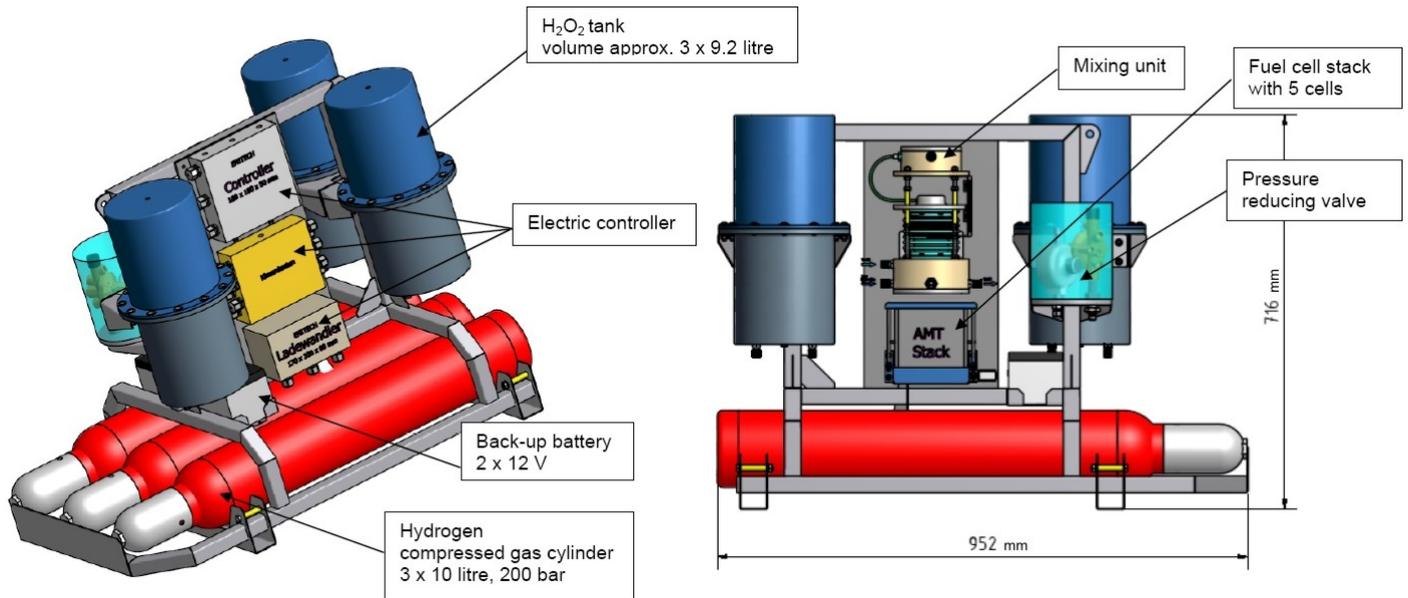


Underwater Fuel Cell System with Hydrogen/H₂O₂



Prototype Characteristics of the Underwater Fuel Cell System with Hydrogen/Hydrogen Peroxide

Fuel cell stack	AMT 5 cell stack (active area: 132,5 cm ²)
Stack voltage	2.5 ...4.5 V
External load	1 ... 3 W
Buffer battery	2 x 12 V, YUASA, serial connection 24 V, 12 Ah
Adjusted end-of-discharge voltage	22 V
Adjusted end-of-charge voltage	27 V
Deep discharge protection	19 V (cutting of external load from the battery)
Stack output power	7 ... 10 W
H ₂ input pressure	50 ... 300 mbar
Dimensions	Approximately 952 x 600 x 716 mm
Weight	Approximately 128 kg
Net volume (water displacement)	Approximately 87 litre
Volumetric energy density of the prototype	259 Wh/l



This prototype of an underwater fuel cell system was tested for 8 weeks in the Baltic Sea near the German coast in order to demonstrate the working principle as a first step. For this purpose a small system was selected with low output power and small fuel and oxidant amounts. At the moment there are some further improvements in development like more cells, the extension of the electrode surface and other fuels.



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