



demo

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608-238-6001 [TEL]

greg@salgenx.com [Email]

Salgenx

Salt Water Flow Battery Demo Cart Single Cell



This webpage QR code

Structured Data

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Salt Water Flow Battery Single Cell demo and experimenters cart.

PDF Version of the webpage (first pages)

Experimental Saltwater Battery Cell Demo Cart

Experimental Saltwater Battery Demo Cell Cart.
Pricing: \$199,000 (custom built to order).

Shipping and handling included to any USA lower 48 location. Includes crate, freight, and shipping insurance. Crate is designed for domestic freight only. International freight requires all-inclusive heat treated wood (optional cost).

3/29/2023

Purpose

Purpose: Infinity Turbine LLC and Salgenx Saltwater Cell is a demonstrator to show saltwater as a battery. This is a one cell unit for demonstration purposes only.

Volts: Cell voltage may be adjusted anywhere ranging from .5-1.8 volts.

Electrolyte Liquid Storage: 2 Liter.

Electrode Assembly: Basic electrode design. This is not the licensed modular electrode for the 3,000 kW system, but a basic version to show that the process works. The modular electrode modular block housing allows you to experiment with other catalysts if desired.

Construction

Construction:

Cart mounted with industrial powder coated caster beams with heavy duty 5 inch swivel casters (fits through any standard hallway, elevator, or doorway).

Unit measures approximately 24 x 48 x 72 inches.

How it Works

How it Works: Circulation pumps allow the liquid electrolytes to be in a continuous closed-loop flow from the storage tanks. A vertical mounted optionally heated assembly allows you to experiment with heating the saltwater liquid flow to simulate thermal storage features.

Multiple sight ports are provided in the modular block electrode assembly which allow you to see inside the electrode. Typically you put a flashlight on one side which allows light to pass through to the other view port so you can see the process. The modular block construction comes with quick release 3/8 inch bolts which allow you to quickly change the electrodes. System includes a powered vent hood for venting to outside (customer supplied vent ducting).

System Parameters

Adjustable System Parameters and Sensing Meters:

- thermal temperature control for flow
- flow rate for electrolytes
- DC power in
- DC power out
- Voltage regulator input
- Voltage resistance for output
- Solution salinity for saltwater electrolyte
- Counter electrolyte liquid options
- Volt/Amp meter
- pH meter
- scales

Uses

Uses:

Showing saltwater as part of a electrochemical cell for storing electricity.

Testing electrodes.

Testing all parameters of flow battery systems.

Cart Power: 110-120 V 60 hz.

What is included

What is Included:

- 24 x 48 x 72 inch professionally powder coating caster beam cart with 5 inch swivel casters
- Aluminum structural horizontal supports
- Caster beams and support use standardized 3/8 inch bolts
- HDPE work table top, bottom, and vertical surface, which allow quick attach points to hold components securely to frame
- Vertical mounted heat banded filter vessel with input and exit ports to allow experimentation with thermal storage in saltwater .
- PID
- Motor controller (110V to DC)
- Heat band controller
- Motor drive
- Aluminum and HDPE modular block assembly housing with 3/8 quick release bolts, including multiple view ports, sensor ports, input and exit ports (reversible)
- Hoses
- Configurable modular block electrode housing assembly
- Professionally built crate
- Power: standard USA 110V power cable included

Parameters

Parameter Options for Sensing / Monitoring / Values:

- System: Volts • Amps • Hz • Temperature
- Electrode: Volts • Amps • Hz • Temperature
- Catalyst • Polarization • Magnetic Field • Shaped Electrode
- Flow: Temperature • Pressure • Flow
- Aqueous Electrolyte: Temperature • Pressure • Flow
- Organic Electrolyte: Temperature • Pressure • Flow
- Video and Image Capture • Online Access • Email Alerts (remote operation or unattended experiments)
- Database: Data Capture
- Database: Experiment Parameter Value Control

Experimental Procedure

Here is a basic experimental procedure sample based on the salt water battery system.

1. Obtain necessary materials: salt water aqueous electrolyte, organic electrolyte, electrodes (e.g. cathode and anode), voltage meter, load center, battery tester, timer, and other equipment as needed.
2. Prepare the salt water solution by dissolving a specific amount of salt in distilled water. Prepare organic electrolyte.
3. Assemble the battery by connecting the electrodes to the voltage meter and immersing them in the salt water and organic solution.

Record the initial voltage reading.

4. Turn on the timer and begin the experiment by running a current through the electrodes.
5. Record the voltage readings at specific time intervals (e.g. every minute) and document any observed changes.
6. Monitor the experiment for any signs of corrosion or degradation of the electrodes.
7. Turn off the current and document the final voltage reading.
8. Disassemble the battery and clean the electrodes.
9. Analyze the data collected during the experiment and compare the results to expected outcomes.
10. Write a report of the experiment, including a summary of the results, any observations, and a discussion of the implications of the findings.

TRL Database

Build your own TRL with custom stages.

This is important for team goals as well as presenting research and development stages to investors.
