



WF Bifrost Series

A WireFlow Battery Solution

The WF Bifrost Series is a flexible and powerful platform designed to meet the needs of the entire battery value chain — from research and development to production testing, reuse, and recycling.

Built on WireFlow's Valand Battery Test & Measurement Platform, Bifrost enables engineers and operators to safely test, charge, discharge, classify, and validate batteries throughout their lifecycle.

Each system is modular, configurable, and scriptable — combining hardware precision with software flexibility to deliver exceptional control, safety, and data traceability.



Figure 1 - Battery life cycle

One Platform - Multiple Applications

We offer both pre-configured solutions and customised systems with different functionalities to deliver a solution meeting your specific needs.

Research & Development

For labs developing new battery chemistries, modules, and packs, Bifrost provides complete test control and automation. Engineers can script and execute custom test scenarios for performance, endurance, and safety validation — accelerating innovation and data insight.

Production & Quality Testing

On the factory floor, Bifrost systems deliver automated end-of-line testing and charging with high reliability. Each battery is identified, configured, tested, and charged to its target SOC — ensuring consistency, traceability, and readiness for shipment or integration.

Repair, Reuse & Refurbishment

In aftermarket and remanufacturing settings, Bifrost safely tests and classifies batteries for second-life use. The platform measures state-of-health, verifies communication, and ensures modules are fit for reuse before reassembly.

Recycling & Energy Recovery

For batteries at the end of their service life, Bifrost supports controlled discharging and classification. The system ensures safe energy recovery and prepares batteries for dismantling or recycling — fully aligned with circular economy principles and EU Battery Regulation requirements.

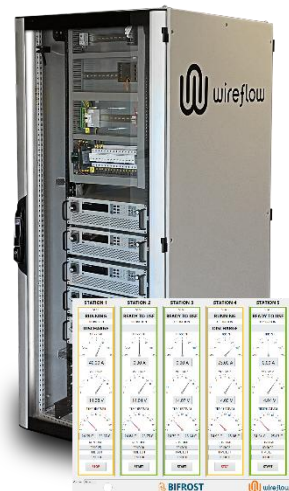


Figure 2- WF Bifrost Battery Tester

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Powered by the Valand Platform

At the heart of every Bifrost system lies Valand, WireFlow's adaptive and scalable software platform for test automation. Its plug-in framework makes it simple to integrate new instruments, I/O modules, or measurement devices as research evolves. Hardware is automatically detected and ready to use.

Scripting

Engineers can create their own tests using Valand's scripting language. The built-in editor validates syntax and includes comprehensive help documentation. All system variables are exposed within the scripting environment, allowing both simple and complex tests — from SOC or voltage cycling with coulomb counting to advanced fault-injection sequences for validating BMS logic.

Safety

A background alarm system continuously monitors user-defined variables (for example voltage, current, temperature). If a limit is exceeded, Valand automatically places the DUT in a safe state.

Logging

All accessible data variables are logged during each test. Results are stored in uniquely named folders, easily exported or analyzed with external systems which ensures full traceability for both development and compliance reporting.

Centralized

The system is controlled by a user-friendly software as a single point of contact. All stations can be run simultaneously and independent from each other and are controlled and monitored from one application.

Integrable

Using our Rest API or Modbus-TCP, you can communicate and control the system from any adjacent system making it a seamless part of your production and test infrastructure.

Upgradable

All products in this series are based on the Valand Battery Test and Measurement platform making it possible for customers to upgrade the systems with new versions and customer specific functionalities if needed.



Figure 3 - Valand Automation Editor for user-defined test