



WF Bifrost for Reuse and Recycling

A WireFlow Battery Solution

The WF Bifrost Series is a flexible and powerful platform designed to support the transition towards a more sustainable and circular battery industry. By streamlining the testing, discharging and classification of batteries ahead of refurbishment, reuse or recycling, Bifrost helps enable the goals and processes promoted by the EU's Battery Regulation.

Bifrost handles multiple test stations in parallel and can process batteries at different stages of their lifecycle simultaneously. The platform identifies battery condition, qualifies it for reuse, or prepares it for safe discharge prior to recycling where energy is efficiently recovered during the process.

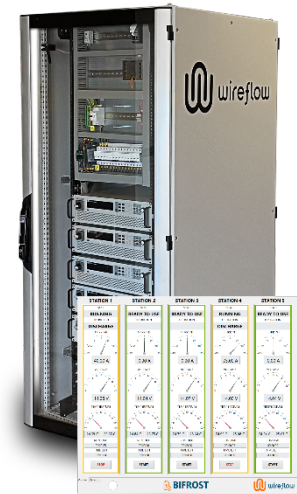


Figure 1- WF Bifrost Battery Tester

All monitoring and oversight are centralized through our Single Point of Control concept, providing full control, high safety and operational efficiency.

Developed for real-world industry needs

The Bifrost platform has been developed in close collaboration with industry partners and is currently used in several critical phases of the battery lifecycle:

- Aftermarket & Refurbishment
- Remanufacturing & Repurposing
- Recycling



Figure 2 - EV battery pack prepared for discharge

Compared to other available products in the market, our modular series provides you with all you need to shift seamlessly from simple to advanced test and measurements with the possibility of a high degree of customization.

Features of Bifrost

- Fast and safe battery discharge to zero volts prior recycling with WireFlow TotalDischarge™, ensuring no energy left in the battery
- Flexible modular charge/discharge system for safe testing, reconditioning, and module replacement within battery packs, supporting efficient repair and second-life use
- Individual cell voltages measurement for safe charge/discharge operation and more precise SOH qualification

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AB0005-145 rev PC1

- State of Health measurement with standard or customized test protocols
- Temperature monitoring and reverse polarity protection for reliable operation
- Reusing recovered energy internally or feeding it back to the grid
- Maintenance and transport charging capabilities
- Full process documentation ensuring traceability for audits and customer compliance
- Automatic work reports providing insights into utilization and efficiency
- Seamless integration with production and IT systems for a connected workflow

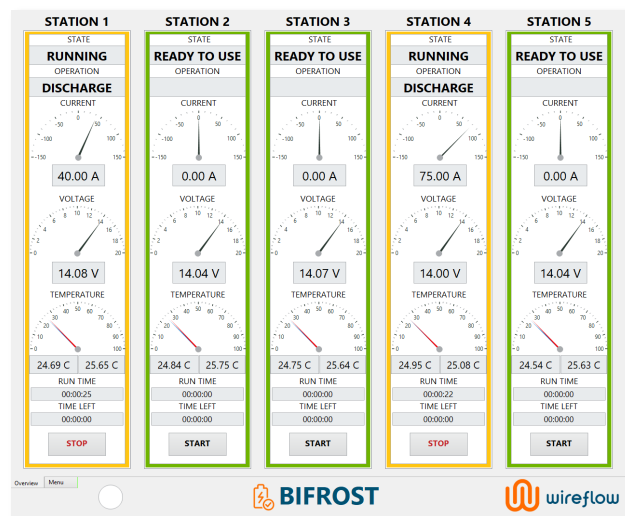


Figure 3 - WF Bifrost front end user interface



Specifications	WF Bifrost for Reuse and Recycling				WF Bifrost for Repair and Refurbishment	Configurable for your needs
Number of channels	5	5	1	1	3	Customized
Max Voltage*	80V	500V	500V	920V	200 V	Customized
Max Current*	150A	40A	250A	250A	140 A	Customized
Power/channel	5kW	6kW	90kW	60kW	10 kW	Customized
Jobs						
Charge to voltage	✓	✓	✓	✓	✓	✗
Discharge to voltage	✓	✓	✓	✓	✓	✗
WireFlow Total Discharge™	✓	✓	✓	✓	✓	✗
Measure cell voltages	-	-	✓	✓	✓	✗
Measure SOH	✓	✓	✓	✓	-	✗
Qualify for 2 nd life	✓	✓	✓	✓	-	✗
Advanced SOH measurement**	-	-	-	-	-	✗
Energy fed back to grid	✓	✓	✓	✓	✓	✗
Features						
Single Point of Control	✓	✓	✓	✓	✓	✗
Script engine for user defined test scripts	✓	✓	✓	✓	✓	✗
Data logging	✓	✓	✓	✓	✓	✗
Independent channels	✓	✓	✓	✓	✓	✗
Distributed connection nodes	✓	✓	✓	✓	✓	✗
CAN communication	-	-	✓	✓	-	✗
Rest API integration	✓	✓	✓	✓	-	✗

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Modbus-TCP	-	-	-	-	-	
Safety						
Over temperature protection	✓	✓	✓	✓	✓	
Over voltage protection	✓	✓	✓	✓	✓	
Over current protection	✓	✓	✓	✓	✓	
Battery polarity check	✓	✓	✓	✓	✓	
Fuses and contactors	✓	✓	✓	✓	✓	
Options						
Scanner	-	-	-	-	✓	
Fingerprint reader	-	-	-	-	✓	
MQTT publisher	✓	✓	✓	✓	✓	
Work reports	✓	✓	✓	✓	-	
Smart module support (isoSPI, RS485, CAN)	-	-	-	-	-	
CO detector	-	-	-	-	-	
IR thermal camera	✓	✓	✓	✓	-	

* Voltage and current can be from 0 to maximum specified

** Advanced SOH: We also offer Advanced SOH measurements by using data analytics providing an extremely fast test process that is tailor made for your needs. Please request more information if interested.