BioLogic

# BATTERY CYCLERS

# BCS Integration Solutions.

Integration in Industry 4.0 environments






# BioLogic's BCS Battery Cyclers in Industry 4.0

BioLogic's Premium and Essential Battery Cycler are designed to integrate seamlessly into modern, connected testing environments.

Beyond high-performance battery testing, the BCS series is built to operate as a fully integrated component of digital laboratories, automated test benches, pilot lines, and industrial environments.

BioLogic offers a complete set of integration solutions based on three complementary tools, API-REST, BT-Drive, and OPC-UA, allowing customers to connect the BCS series to their existing software and automation ecosystems while preserving performance, reliability, and data integrity.

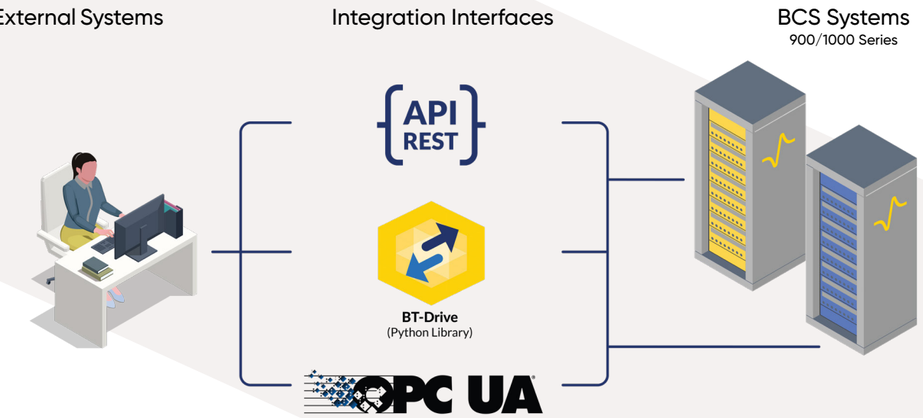
## Why Integration Matters?

Industry 4.0 is driven by connectivity, automation, and data-driven decision making. Battery testing systems need to operate not just as standalone instruments, but as fully integrated components of digital laboratories, pilot lines, and production environments.

**BioLogic's integration solutions allow customers to:**

- Automate complex testing workflows
- Centralize control & supervision of multiple systems
- Enable real-time monitoring, alarms, & data exchange
- Interface with third-party hardware, software, & PLCs
- Prepare test data for advanced analytics & AI

## BCS System Integrations




## Associated Services

BioLogic also offers complementary integration services based on customer specifications. Each solution is unique & formulated after a structured process: requirement analysis, feasibility assessment, specification, development, testing, then delivery.

### Tailored Services

- Custom interfaces & dashboards
- Integration with third-party systems
- Architectures for specific applications

### Training & Support

- Dedicated training & onboarding
- In-person or remote trainings
- Continued support

# Integration Solutions for Battery Testing

## REST API




The REST API is the foundation of BCS integration. It is a mature, validated, and fully supported interface offering the same functional coverage as BT-Test™. It enables external applications to communicate directly with the BCS system using standard web technologies.

- Used internally by BT-Test™
- HTTP-based client/server architecture
- Compatable with all programming languages & operating systems

**Best for:**
Integrators & developers requiring detailed access to BCS systems



BT-Drive
(Python Library)

## BT-Drive (Python Library)

BT-Drive is a high-level Python library built on top of the REST API. It simplifies integration reduces development time by focusing on essential workflows.

- Python-based, fast to learn & deploy
- Up to 5x fewer lines of code vs. REST API
- Up to 20x faster development time vs. REST API
- Readable, self-explanatory code

**Best for:**
R&D labs that require rapid prototyping

## OPC-UA

OPC-UA is an open, platform-independent industrial communication standard widely used in Industry 4.0 & smart manufacturing.

- Standardized & interoperable
- Secure (authentication & encryption)
- Supports real-time data, alarms, & events
- Compatible with PLCs & industrial SCADA systems

**Best for:**
Automated test stands, pilot lines, industrial environments

### Case Example:

A large R&D facility managing hundreds of test channels, multiple climatic chambers, & various safety-critical equipment requires a unified integration solution. Operating at this scale, fragmented control systems & manual data handling are no longer viable & a centralized operational control is required

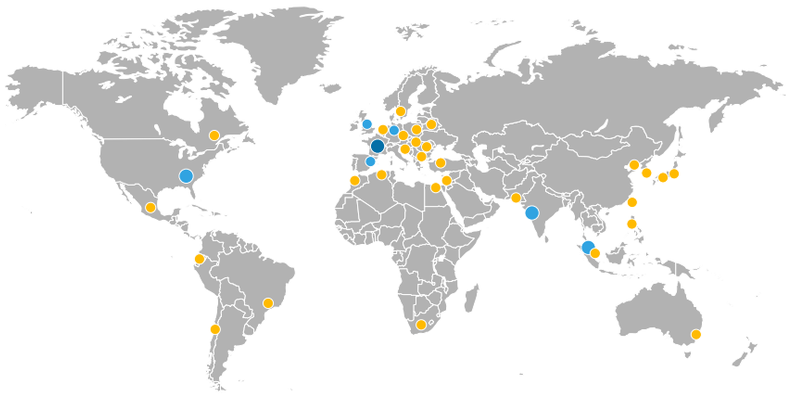
With BioLogic integrated solutions, this lab can achieve a fully integrated environment with automated workflows.

**The result:** Fewer manual interventions, consistent data, & reliable multi-channel test campaigns.

We serve our customers worldwide through our subsidiary offices and our extensive distribution network.

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Leaflet BT-LE-039-b released September 2024 - Specifications and pictures subject to change.

## Always by your side. Wherever you are.

We here at BioLogic pride ourselves on the quality and robustness of our instruments. However if you, for whatever reason, encounter a problem with your Battery Cycler, our global support network will help find you a solution quickly and effectively.

If you need more information, or perhaps a little inspiration, you can browse our ever-growing support database with hundreds of Learning Center articles, application/technical notes and support videos at www.biologic.net.

**Application notes** **Learning center** **Tutorials** **Videos**

**biologic.net**

**Shaping the future. Together.**