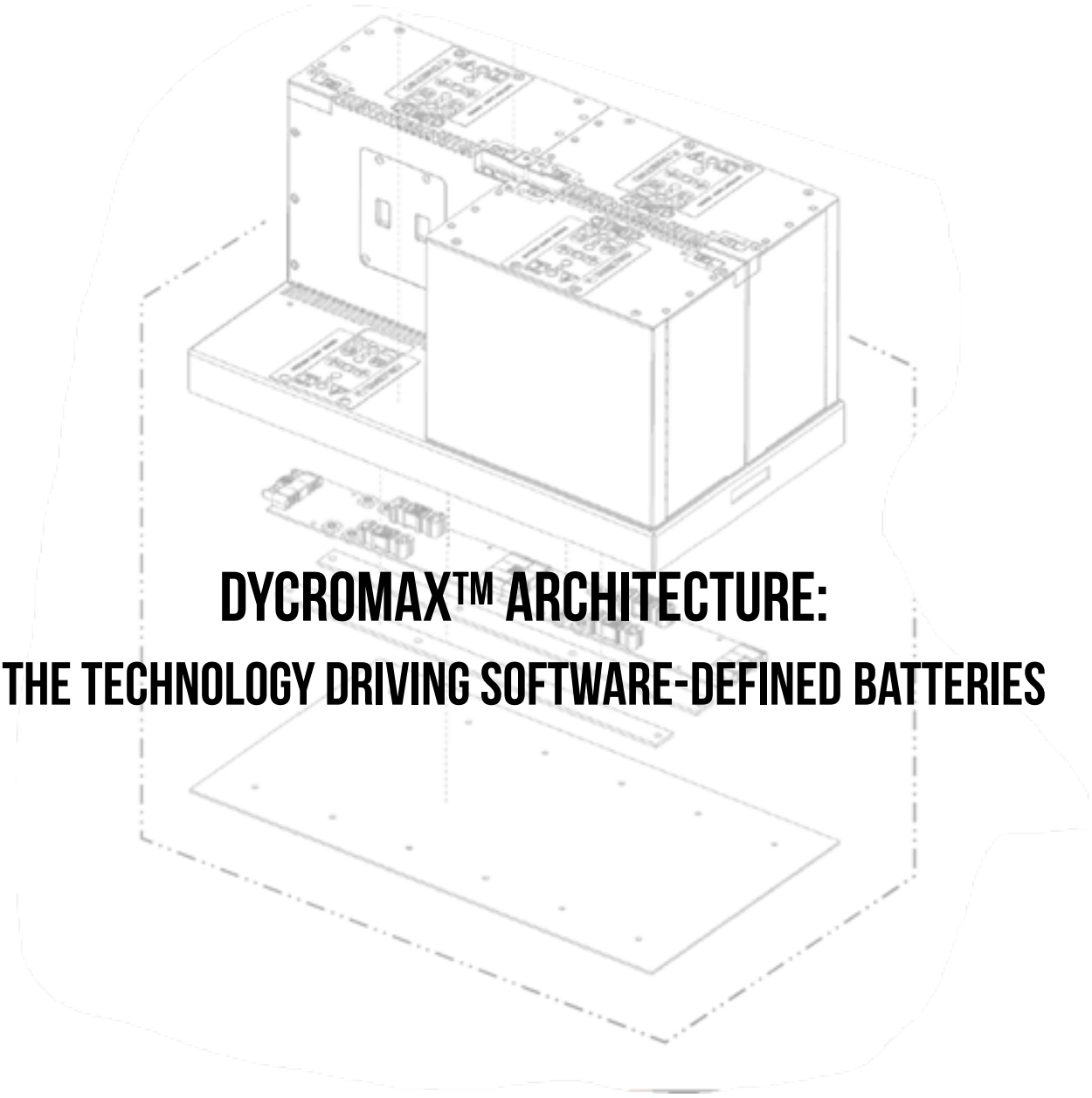


DYCROMAX™ ARCHITECTURE:

THE TECHNOLOGY DRIVING SOFTWARE-DEFINED BATTERIES

The Tanktwo Battery Operating System (TBOS) offers product builders and operators unprecedented scalability, flexibility, serviceability, and reliability to make electrification at an industrial and commercial scale sustainable and profitable.

We achieve these benefits by allowing product builders and operators to mix cells with different battery chemistries, bypass non-functioning cells, disable and enable cells on the fly, use granular data to determine each cell's state of health (SoH), etc.

Our Dynamic Current Routing Matrix (Dycromax™) Architecture is the key to delivering these capabilities, which aren't possible with traditional battery management systems (BMSs).

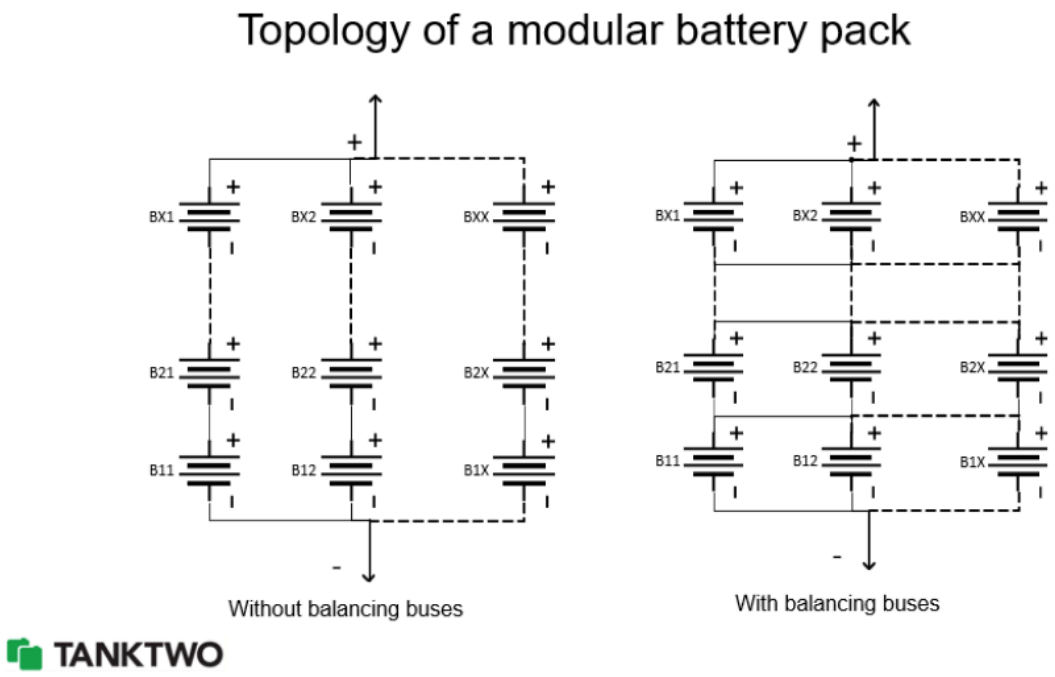
CHALLENGES OF TRADITIONAL BATTERY MANAGEMENT SYSTEMS

Here are some constraints posed by current battery technologies that make realizing the promises and potential of electrification challenging:

- Placing switches in the current path to vary output voltages causes energy losses proportional to the square of the current — negatively impacting the battery's efficiency.
- Traditional BMSs balance cells by dissipating or redistributing extra charges, creating significant energy losses.
- Fixed battery pack configuration means operators often have to discard the entire unit even if there's only one cell fails, resulting in massive wastage.
- Without the ability to understand individual cells' SoH and disable those that may pose safety issues, companies have to perform inefficient and wasteful just-in-case maintenance — replacing and disposing of perfectly functioning battery packs.
- Companies can't change the battery configuration and characteristics on the fly to meet shifting requirements. They must send the equipment to the manufacturer, which opens up the machinery and installs a different battery pack — a time-consuming and costly task.

THE DYCROMAX ARCHITECTURE

Dycromax is the key technology behind many of TBOS's unique capabilities. Here's how it works to achieve the various benefits offered by our software-defined battery solutions:



CONFIGURABLE OUTPUT VOLTAGES

Dycromax leverages the latest semiconductor technology, gallium nitrate (GaN) field effect transistor (FET), to minimize conduction losses caused by placing switches in the current path — supporting variable output voltages with minimum energy losses.

Dycromax also allows operators to change the battery module connection from parallel to series and vice versa on the fly via our software. For example, they can achieve a higher output voltage by making the modules

work in series. Moreover, the system can adjust the output voltage by changing the number of cells connected in series.

Product builders and operators can stock just a few variants of the battery pack to power equipment with different power requirements — streamlining inventory management and reducing the costs of having many different battery pack variants on the shelf.

YELLOW-FLAGGING AND BYPASSING CELLS

Using Dycromax, our software can shut down malfunctioning cells without impacting operational continuity so a device can continue working as intended to ensure high availability for mission-critical applications.

Meanwhile, TBOS collects and analyzes telemetry from cells in real-time to calculate each cell's SoH, optimize utilization, and maximize the longevity of the system. The system yellow-flags cells that are aging, show statistically anomalous behaviors or are under high stress.

The system bypasses these yellow-flagged cells during normal operations without impacting performance and activates them when power demand surges. Meanwhile, telemetry provides insights into each cell's SoH to reduce the risks of thermal runaway events and support second-life usage — improving lifetime economics and reducing resource wastage.

This capability offers visibility to support just-in-time maintenance to achieve extreme reliability in mission-critical applications without the waste and inefficiency associated with the just-in-case maintenance approach. Companies no longer have to switch out battery packs when most cells' capacities are still intact just to avoid failure.

CONSISTENT OUTPUT VOLTAGE

The output voltage of traditional battery packs varies because each cell has a different state of charge (SoC). For example, if 100 cells are connected in series, the output voltage can range from 320V to 420V. The variation requires product builders to design their equipment to accept a lenient load, leading to lower efficiency and higher costs.

TBOS monitors the SoC of each cell and connects more cells in a series when their SoC deteriorates. It activates the most suitable cells to meet the current mode and bus voltage. It also uses ongoing measurements to ensure each cell operates within its limit while fulfilling the applications' requirements (e.g., by producing a consistent output voltage.)

The continuous string (re)selection balances the cells during charge and discharge cycles without the energy losses associated with traditional methods. The control unit selects the cells with the lowest SoC viable for charging (i.e., not yellow-flagged) and those with the highest SoC for discharging.

MAXIMUM POWER POINT (MPP) TRACKING

MPP is the power output that supports an application's optimal efficiency and performance. Traditional battery packs can't identify MPP. Instead, product builders must design the application to accommodate a wide range of output voltages.

On the other hand, Dycromax collects data and passes the information to the software to perform analytics and identify the MPP for each specific application. It then uses the results to select the appropriate cells to generate the desired output voltage.

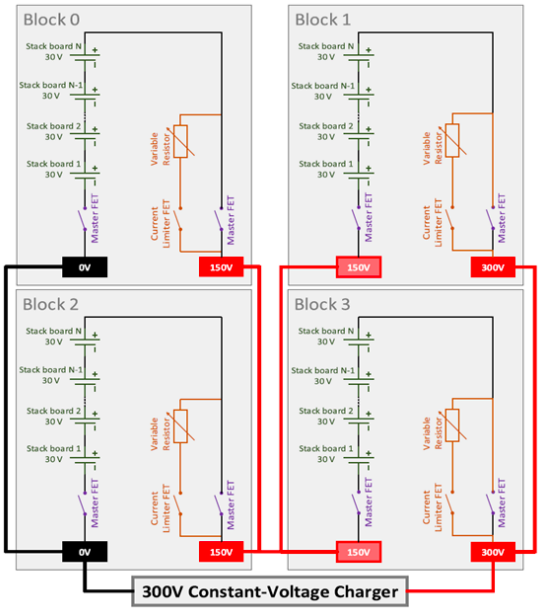
Our battery system's ability to use MPP tracking to produce a wide range of consistent output voltage eliminates the use of DC-DC converters, which create significant efficiency loss. It also allows product builders to reduce the time and resources they invest in building applications that can accommodate a broad output voltage range.

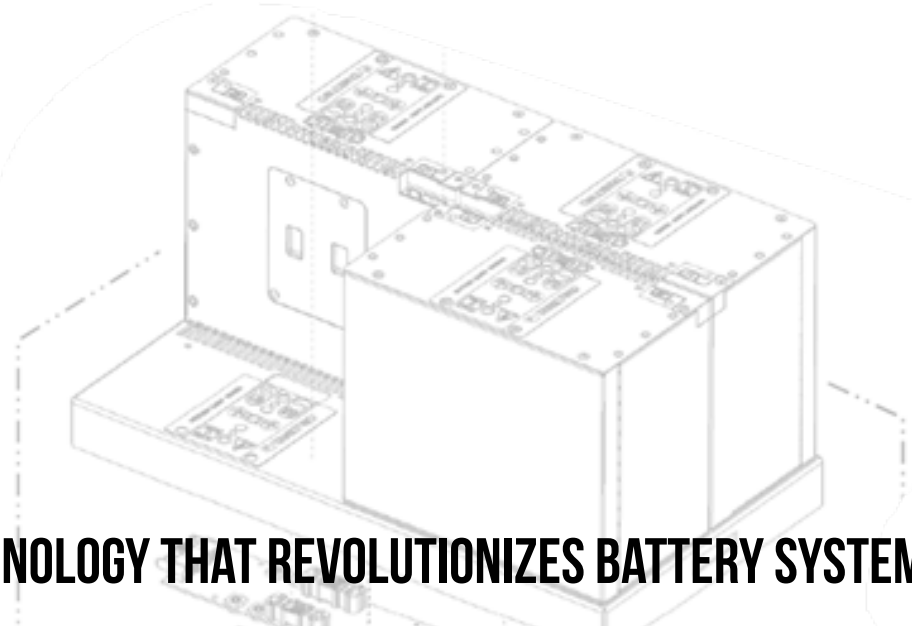
CHARGING FROM A CONSTANT VOLTAGE SOURCE

Dycromax allows operators to charge a battery pack from a simple, constant voltage source (i.e., DC power) for added flexibility, adaptability, and operational agility.

We achieve this capability by incorporating a current-limiting component — a variable resistor installed in series with the cells — to create the desired current level. The system can bypass this resistor if no current limiting is required to minimize energy loss.

Each battery module adjusts in real time based on measurement data. Each block can stop or continue charging independently to optimize SoC. Additionally, no communication is required between the system control, modules, or the charger — simplifying the equipment design and minimizing the need to maintain multiple components.





THE TECHNOLOGY THAT REVOLUTIONIZES BATTERY SYSTEM DESIGN

Dycromax is one of the patented technologies that enable our data-driven, software-defined batteries to achieve the flexibility, reliability, performance, and cost-efficiency deemed impossible even by battery industry veterans.

TBOS offers the features and capabilities we need to enable sustainable and profitable electrification in every sector, from industrial and defense to medical and logistics — allowing our investors, partners, and customers to do well by doing good.