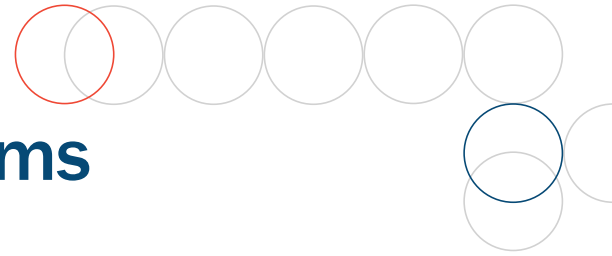


# Rethink Manufacturing of Battery Energy Storage Systems



## Modular and Scalable

The assembly of Battery Energy Storage Systems (BESS) is problematic for humans, or traditional automation, to do successfully. At Bright Machines, we partner with manufacturers of BESS products to create a new category of intelligent automation. Powered by the Brightware® Platform, Bright Machines® Microfactories leverage production data to reduce defects and enable benchmarking while also providing a common architecture on which to reliably and cost effectively scale operations.

### CHALLENGE

Future-proofing their new BESS assembly line was a key criteria for a large US-based manufacturer who wanted to ensure that the new line had the flexibility to accommodate future product revisions and new product SKUs.

### SOLUTION

Bright Machines configured a microfactory with thirteen robotic cells which performed all the assembly steps including testing and sorting of individual battery cells, placing the cells into the housing, welding the cell connections, and assembling, labeling and testing the module.

### RESULTS

The microfactory enabled the manufacturer to perform assembly of BESS products making approximately 5,000 modules per day with 99% yield and 90% adjusted OEE expected in production

### Flexible | Build multiple SKUs on the same line



Bright Machines Microfactories can be used to automate a single operation or the entire BESS assembly process. Assembly recipes are created for each SKU to be built on the line. Adding new SKUs is easy because existing recipes can be leveraged and modified as needed. And because microfactories are software-driven, product changeovers, to go from one SKU to another one, occur very quickly.

## Traceability and Safety

Brightware Platform collects component, process, and quality data during every step of the manufacturing process and across all microfactory lines whether installed in-house or at your manufacturing partner's sites. This data, along with vision-based inspection, can be used for manufacturing traceability and to improve product safety. Know which cells went into which modules and have a history of the assembly and testing results for each module.

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