

Future-proof your  
manufacturing process and gain  
a competitive edge.



## Branson™ Polaris Ultrasonic Welding Platform

Optimize the efficiency of your evolving manufacturing process with flexible and scalable plastics joining solutions.



## Dynamic markets require flexible and scalable manufacturing technologies optimized to your production needs.

To remain competitive within dynamic and evolving markets, manufacturers must be able to quickly and seamlessly transition from laboratory testing applications to fully automated production and then continuously adapt to demands across the lifecycle of a product. Production applications are unique, requiring manufacturing technologies that can be customized and configured to your specific needs, helping to ensure quality, optimize efficiency and throughput, and maximize return on investment. Implementing flexible and scalable plastics assembly technologies that meet diverse manufacturing requirements is essential to give you a competitive edge.

Up to 30% of manufacturing capacity is lost each year due to inefficiencies in processes and systems.

– Manufacturing Leadership Council



“The modern manufacturer is no longer competing just on price or quality – but on speed, flexibility, and data intelligence.”

– World Economic Forum





In dynamic markets you need flexible manufacturing that helps you remain competitive. What if your welding platform was both configurable to your specific application and adjustable to meet changing demands, maximizing operational efficiency long-term?

## The Branson Polaris Ultrasonic Welding Platform brings unmatched flexibility, efficiency and productivity to your operations.



The Branson Polaris Ultrasonic Welding Platform is a compact, configurable, and scalable system that supports the full product manufacturing lifecycle – from benchtop development to full-scale production. Designed for a wide range of plastics assembly applications, the system delivers robust, reliable welding performance and integrates seamlessly into your automated processes to enhance overall manufacturing efficiency. With the flexibility to adapt to evolving manufacturing needs and dynamic market demands, the Polaris Platform helps future-proof your production capabilities.

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“The flexible configuration, multiple data connectivity options and enhanced cybersecurity simplifies integration and installation within your automated manufacturing environment.”  
– Kerryn Harrington, Global Product Manager, Emerson

### **Gain a competitive edge through precise automated joining.**

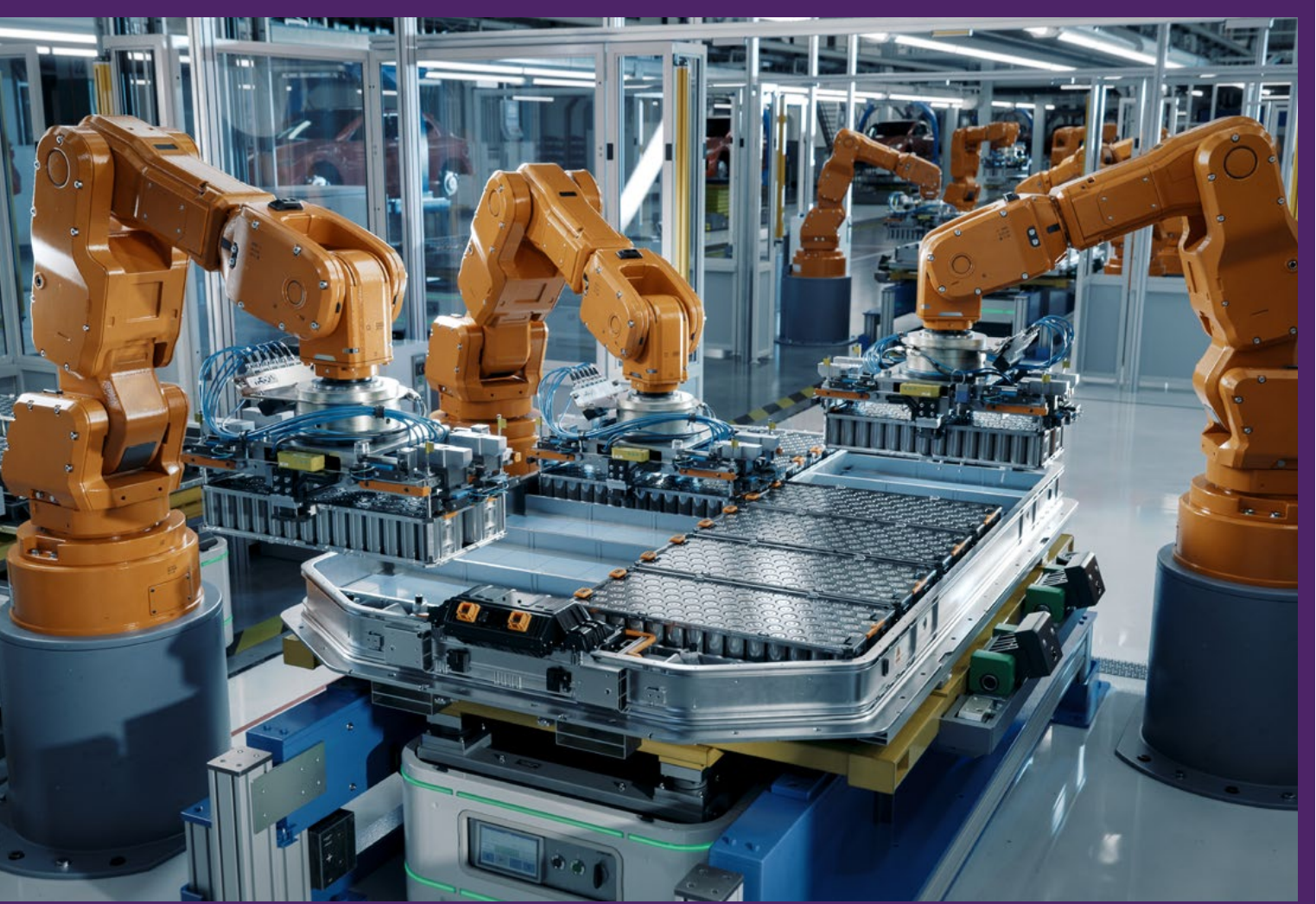
Integration within your automated manufacturing process ensures precise repeatable high-quality welds, reducing manufacturing costs and increasing throughput, while advanced pressure regulation and downspeed control enables the development of innovative (miniature and complex) products.

Innovation & Efficiency ▶ p6

### **Maximize return on investment with a future-proof welding platform.**

A configurable system designed to maximize the performance of any application size or complexity. It can serve as a benchtop laboratory system or scale to a fully automated production system that creates manufacturing efficiencies.

Flexibility & Scalability ▶ p8



## Enable greater product INNOVATION and production EFFICIENCY.

As a manufacturer of automotive parts, medical devices or packaging, having a competitive edge requires greater product innovation and efficient, optimized production of high-quality components. This places significant demands on your joining solutions. The Branson Polaris Ultrasonic Welding Platform allows automation-driven operational efficiencies, such as repeatable high-quality welds and limited maintenance downtime, that reduces costs and increases throughput. Industrial ethernet connectivity supports integration with your automation system and creates the opportunity to remotely control manufacturing parameters, helping boost quality, speed and precision. The Branson Polaris also supports product innovation with electronic pressure regulation and downspeed control enabling the production of smaller and more complex product designs.

### What's your challenge?



"Up to 30% of manufacturing capacity is lost each year due to inefficiencies in processes and systems."  
– Manufacturing Leadership Council

### What's your opportunity?



Simple integration into automated production environments and the availability of secure machine performance data enables the Branson Polaris Platform to support operational improvements and increased throughput.

## Enable automated manufacturing



Connectivity provided by OPC-UA and communication protocols including Ethernet/IP and PROFINET enables simple integration into your automation system.



Compact actuator and power supply with flexible mounting options creates a smaller overall footprint, enabling easier integration into your automated manufacturing system.

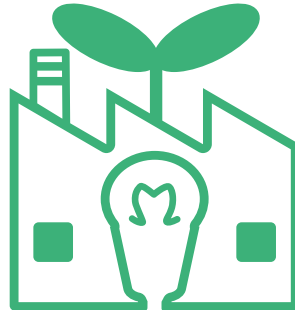


Electronic controls enable remote control of welder operations without the use of a local HMI for an easily adjustable automated solution.

## Increase operational efficiency



Enhanced cylinder reliability and service notifications help reduce maintenance and increase availability, maximizing production throughput.



Improved frequency control reduces power use for greater energy efficiency, contributing to lower overall production costs.



Robust and reliable performance with improved downspeed repeatability ensuring high-quality assembly every time.

## Address product innovation trends



Electronic pressure regulation and enhanced downspeed control, combined with pressure and amplitude stepping ensure precise repeatable welding of very small, delicate and complex products.



Global service application support helps with appropriate system selection and set-up to ensure exact product manufacturing parameters are delivered.



Need help to choose, implement and optimize the right solution for your application, visit [Emerson.com/Branson](https://www.emerson.com/Branson)



## FLEXIBILITY and SCALABILITY to meet manufacturing demands.

As products and manufacturing demands become more complex and your business continues to grow, flexibility and adaptability in production systems are more critical than ever. The Branson Polaris Ultrasonic Welding Platform meets this need with a highly configurable system that allows you to mix and match actuators and power supplies for optimized performance tailored to your specific application. Its modular, scalable design ensures seamless adaptation to changing production requirements – whether for benchtop use or integration into full-scale automated lines – enabling consistent system use throughout the entire product lifecycle.

### What's your challenge?



“The modern manufacturer is no longer competing just on price or quality – but on speed, flexibility, and data intelligence.”  
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### What's your opportunity?



The scalability and ease of set up of the Branson Polaris Platform enables manufacturers of small batches and variable product designs to quickly adjust to variable market demands.

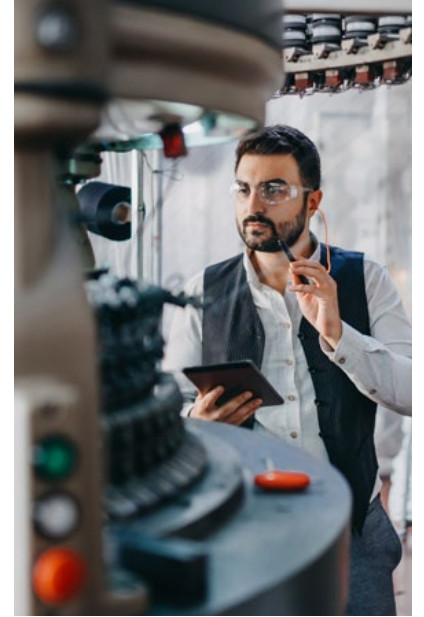
## Optimize your operations



Configurable range of compact power supplies and actuators that creates a welding solution tailored to your specific application.

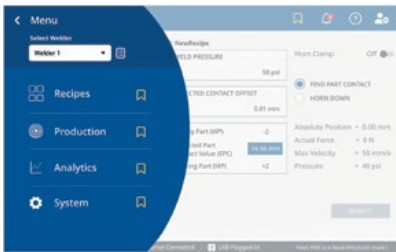


Adaptable form factor and software allow you to scale up from a benchtop laboratory system to a fully automated production solution.



In-field upgrades minimize production downtime, while ensuring the system is future-proofed for a maximum return on investment.

## Faster and easier installation



Intuitive set-up process with user-friendly controls accessible remotely or via local display, minimizing training requirements and enabling fast production start-up.



Quick stack exchange and software allow you to scale up from a benchtop laboratory system to a fully automated production solution.



Flexible installation options including a mountable power supply ensure the welder can be installed within your unique automated production process.



Need help to choose, implement and optimize the right solution for your application, visit [Emerson.com/Branson](https://www.emerson.com/Branson)

# The Branson Polaris maximizes welding performance across the lifecycle of your product.



## Simple operator usability

- Simple and remote access to welder controls with option to manage up to four welders on the PC HMI.
- HMI software accessible on PC or local display includes intuitive 'set-up' assistance for rapid production start-up.
- Operation summary screen provides immediate understanding of system and production status.
- Simplified navigation using shortcut buttons increases operator efficiency.

## Enhanced welding performance

- Dynamic triggering ensures consistent weld quality by triggering ultrasonic vibrations after a preset force.
- Closed-loop amplitude control corrects for variations due to power line fluctuations and varying load conditions, improving weld consistency.
- Digital power supply technology provides complete control of amplitude throughout the weld cycle.

## Branson Polaris overview

Engineered to maximize plastic assembly performance and drive production efficiency, the Branson Polaris Ultrasonic Welding Platform offers seamless integration into automated manufacturing environments. This scalable, configurable system can be tailored to your specific application needs – equally effective for benchtop set-ups or fully automated production lines. Its versatility supports the entire product lifecycle, helping reduce operator training time and improve consistency through familiar, user-friendly operation. Delivering repeatable,

high-performance welds – even on small or complex parts – the Polaris Platform enhances both product quality and throughput. At the same time, its energy-efficient design and low maintenance requirements help lower operational costs. With modern automation controls and industrial ethernet connectivity, Polaris enables seamless communication with your manufacturing control system. Real-time data exchange ensures weld quality, performance monitoring, and full traceability across your production process.

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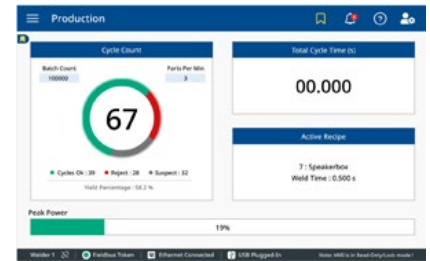
## Data-driven performance improvements



- Weld performance data accessible on PC HMI or local display for analysis and validation ensuring quality and compliance.



- Ethernet communications allow secure real-time production data transfer to the cloud for local or global analysis.



- Event logging and welding performance data recorded to provide traceability and support manufacturing audit trail. Up to 1 million weld results, 1000 alarms and 1000 recipes can be stored.

Error Type	Alarm ID	Recipe	Recipe Ver	Cycle#	Date/Time
Start Switch Time	628	7	0	178	2010-04-07 00:15
<b>Description</b>		<b>Username</b>	<b>Alarm Type</b>		
Both start switches were not pressed within the allowed time frame.		N/A	600		
<b>Probable Reasons</b> : Lorem ipsum is a placeholder text commonly used to demonstrate the visual form of a document or a typeface without relying on meaningful content.					
Start Switch Time	628	7	0	179	2010-04-07 00:15
Start Switch Time	609	7	0	180	2010-04-07 00:15

- Configure service reminders and calibration reminders to ensure regular maintenance and avoid unscheduled downtime.



- Use barcode scanning to record part ID for traceability and quickly recall weld presets.

## Flexible actuator and power supplies



- Choice of Advanced or Core actuators that enable manually or electronic (remote) setting of weld and hold pressures, and downspeed.



- P2100 or P2200 power supplies provide continuous process control, with multiple mounting options, advanced diagnostics or remote set-up.

**Enable automated plastics assembly  
that increases production efficiency and  
future-proof your manufacturing.**



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