

**Unpack your knowledge on how  
Emerson can optimize your pet  
food operations**



## **Complete Solutions for the Pet Food Industry**

Proven automation solutions and local expertise to help you overcome your toughest challenges.





Grinding & Pre-cooking



Blending, Shaping & Drying



Packaging



CIP & Utilities



## Learn How to Optimize Your Pet Food Operations

In today's rapidly evolving pet food industry, where regulations are becoming progressively more demanding, food safety is at the core of any production process and there is a need to improve production throughput while ensuring product quality and reducing product costs. Additionally, being compliant with regulatory requirements from agencies and governments is crucial. By teaming with Emerson, you'll gain the tools and insights to maximize your production capacity, reduce your production costs and associated product losses, and achieve a step change in reaching your sustainability targets.

## Solutions for your Pet Food Operations

### Maximize Your Production Capacity

A lack of flexibility and excessive amounts of planned and unplanned downtime can prevent you from maximizing your production, subjecting you to higher operating costs. Emerson's solutions help you overcome these challenges by shortening your changeover time, increasing the effectiveness of your planned downtime, and reducing the frequency, impact and duration of unplanned events. All of this, while helping you ensure the highest levels of food safety in your manufacturing processes, assuring the desired quality in the final product and being compliant with the latest regulations and rules.

### Reduce Production Costs

Product losses, rising labor costs and inefficient energy usage can erode your operation's profitability. Emerson's solutions help you reduce these production costs with advanced automation technologies that provide enhanced insight into your processes for assured product quality, more efficient operations and improved energy management.

### Meet Your Sustainability Goals

Inefficient processes and/or insufficient equipment can impede your sustainability efforts by causing your operations to use too much water, produce excess waste, and increase your carbon footprint. Emerson's solutions provide enhanced insight into your operations for increased efficiency throughout your production process so that you can meet your sustainability goals.



## Grinding & Pre-cooking



## Grinding & Pre-cooking

Reducing waste, optimizing inventory movements and key processes



### Dry Ingredient Receiving and Storing

Measuring inside large silos and storage tanks can be challenging. The **Rosemount 5408™ Non Contacting Radar Level Transmitter** is the ideal solution to control and monitor these applications, providing accurate and reliable measurements thanks to its advanced surface tracking, and the air purging system avoids blockage of the antenna.

The **Rosemount 2500 Solids Level Switches** offer a range of bulk solids point level measurement. With a compact size, this timeproven and trusted technology is suitable for operations in the most challenging environments, including high temperature, pressure, and dust.



### Wet Ingredient Receiving and Storing

Maintain precise knowledge and control of the level of your large storage tanks with **Rosemount 3051HT Hygienic Pressure Transmitter**. Obtain accurate and reliable continuous measurement over numerous batches in small buffer tanks with the **Rosemount 3408 Non-Contacting Radar Level Transmitter**.

Add an extra layer of protection by installing **Rosemount 2120 Hygienic Level Switch** to prevent overfills in your tank.

Additionally, **Micro Motion™ ELITE Series Meters** are ideal for accurate and repeatable flow measurement during unloading of wet ingredients from tanker trucks.



### Grinding

In the grinding process frozen packs of meat such as duck, turkey, beef, and chicken, are broken down through a series of screws. The screws help to break down the meat chunks into the desired size for pre-cooking.

The **Rosemount 5408 Non Contacting Radar Level Transmitter** can be used to monitor the level of meat product in the screw to prevent clogging and jamming of the system.



### Pre-cooking

After being grounded, the meat is pre-cooked at a constant temperature in a steaming tank to ensure food safety. Leverage the **Rosemount 3408 Non-Contacting Radar Level Transmitter** for accurate and reliable level continuous measurement under conditions of high temperatures.

Additionally, during the precooking process choline chloride is commonly injected into the meat for its metabolism and cellular growth benefits. **Micro Motion F-Series Meters** are ideal for batch-to-batch repeatability.



**Featured Products for Grinding & Pre-cooking**

**Rosemount 3051HT Hygienic Pressure Transmitter**



Best in class reference accuracy plus up to a 7-year stability ensure the Rosemount 3051HT will deliver precise and repeatable pressure measurements in even the toughest applications. Batch to Batch repeatability testing ensures that pressure measurements will stay within specification even after being subjected to routine, high temperature cleanings.

**Rosemount 5408 Non-Contacting Radar Level Transmitter**



The Rosemount 5408 Level Transmitter Non-Contacting Radar provides easy to use continuous level measurement of both liquids and solids in any application. Two-wire FMCW technology maximizes radar signal strength to produce a robust and reliable measurement.

**Rosemount 2500 Solids Level Switches**



The Rosemount 2500 Solids Switch range offers the complete choice of point level measurement for bulk solids. Four different technologies are available: Rotating paddle, vibrating rod, vibrating fork, and capacitance. The switches provide flexible measurement of meat products and cereals, and their compact size makes them ideal for installation in all sizes of vessels and silos.

**Micro Motion F-Series, H-Series and Elite Coriolis Flow Meters**



With unmatched flow and density measurement for liquids, Emerson offers a full range of Micro Motion Coriolis flow meters. From the compact and drainable F-Series, the H-Series Hygienic to the ELITE, the full range is designed to deliver accurate, repeatable flow and concentration measurement, and is perfectly suited for specific pet food applications.

**Featured Products for Grinding & Pre-cooking**

**Rosemount 2120 Hygienic Level Switch**



A level switch that's 3-A and EHEDG approved, easy-to-install with no on-site calibration, the Rosemount 2120 provides reliable, rapid and repeatable point level measurement for high/low level alarm, overflow prevention and pump control/protection. The single-piece fast-drip fork design is resistant to build-up. An adjustable switch delay prevents false switching in turbulent conditions. The robust housing protects the electronics in humid environments. A clearly visible heartbeat LED indicates the process state.

**Rosemount 1408H Non-Contacting Radar Level Transmitter**



The Rosemount 1408H Non-Contacting Radar Level Transmitter has been specifically designed for food and beverage applications and provides continuous liquid level measurement. Featuring 80GHz FMCW Fast Sweep technology and smart algorithms, it provides more information compared to legacy technologies, thus delivering more accurate and reliable measurement signals.

**Rosemount 3408 Non-Contacting Radar Level Transmitter**



The Rosemount 3408 Non-Contacting Radar level Transmitter provides easy-to-use continuous level measurement of liquids in most applications. Two-wire FMCW technology maximizes radar signal strength to produce a robust and reliable measurement.

**Micro Motion ELITE Coriolis Flow and Density Meters**



The ELITE Series is designed to deliver accurate, repeatable flow and concentration measurement, and is ideal for challenging liquid, gas, and slurry pet food applications.



## Blending, Shaping & Drying

## Blending, Shaping & Drying

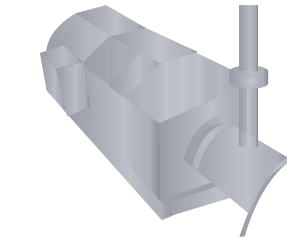
Reducing product waste, increasing throughput, and improving product quality



### Blending and Batching

Ingredients such as cereal grains, oil, flavors, or coloring agents are added to the meat mixture and blended.

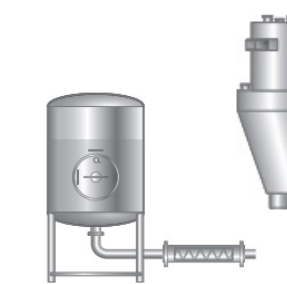
In continuous blending processes, there is a steady flow of material while in batch blending processes the flow of material stops once the batch is completed. **Micro Motion Elite Series Meters** will help you measure accurately the blend ingredients into the meat mixture base and achieve the desired flow of material while ensuring batch repeatability.



### Emulsifying

After blending and batching the meat mixture is moved through an emulsifier. Emulsification is an important step in pet food production to help prevent separation of ingredients.

The **Rosemount 8600 and 8800D Vortex Meters** are ideal solutions for ensuring the correct consistency and texture of the mixture before it is moved to shaping.

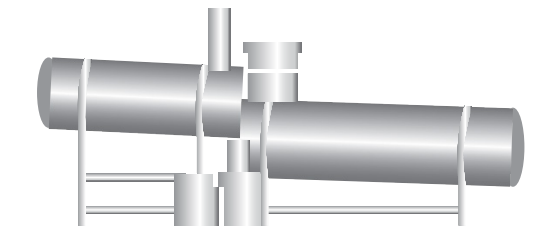


### Shaping and Drying

After blending the different ingredients together, the meat mixture is moisturized and transferred to the extruder, which will work the mixture into a dough and shape it to the desired design and size.

In the drying phase the pet food molds are moved on a conveyor belt through a series of dryers to reduce the moisture from the final product, ensuring food safety and preventing bacteria growth.

Accurately monitor and control the amount of gas used in each dryer with **Rosemount 3051SFA Annubar™ Flow Meter** and **Rosemount 8800D Vortex Meter** to ensure compliance with sustainability goals.



### Coating and Cooling

The coating phase requires a consistent spreading of liquid and dry palatants, which will make the final product tastier. **Micro Motion ELITE Series Meters** are designed for repeatable flow measurement to ensure a consistent spread of palatants batch after batch.

In the cooling phase, the product temperature is controlled to guarantee product quality. **Rosemount Hygienic Temperature Sensors** ensure accurate process temperature monitoring. Immediate alerts are received if undesired conditions are observed, so you can take corrective action and optimize output.



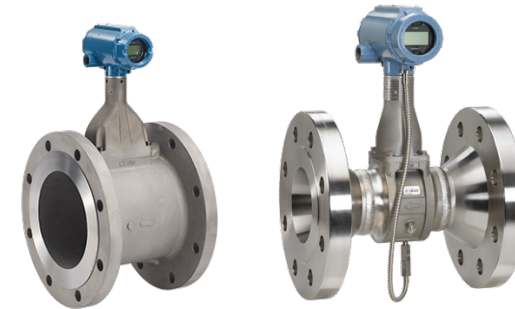
## Featured Products for Blending, Shaping & Drying

### Micro Motion ELITE Coriolis Flow and Density Meters



The ELITE Series is designed to deliver accurate, repeatable flow and concentration measurement, and is ideal for challenging liquid, gas, and slurry pet food applications.

### Rosemount 8600 and 8800D Vortex Meters



The Vortex flow meter product range is designed for utility and process applications. Features include the Adaptive Digital Signal Processing (ADSP) to provide immunity from vibration causing unstable or false flow readings and the robust design enables the sensor to be replaced without down-time. Additionally, input from an external HART® pressure transmitter provides temperature and pressure compensation, enabling compensated mass flow and corrected volume in steam and liquid applications.

### Rosemount 3051SFA Annubar Flow Meter



The Rosemount 3051SFA Annubar™ Flow Meter is designed with built-in flow calculations for direct reporting of mass flow and a patented T-shape sensor. It's patented t-shaped sensor is capable of obtaining measurements via a single pipe penetration while maintain a small profile in the pipe to reduce permanent pressure loss and increase energy savings.

### Rosemount Hygienic Temperature Sensors



An industry-standard, resistance temperature detector (RTD). This sensor is engineered to provide flexible and reliable temperature measurements in hygienic process environments for the pet food Industry. This RTD is designed with a Tri Clamp® sanitary endcap configuration for easy installation and its aseptic process connection is suitable for clean-in-place (CIP), dead-pocket free, measurement applications.

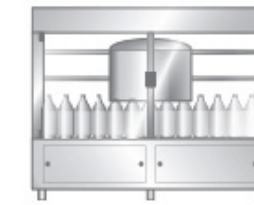


## Packaging



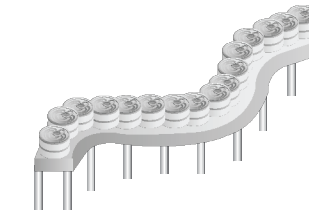
## Packaging

Optimizing operations and ensuring food safety



### Sterilizing

In the sterilization process, canned pet food is commonly heated for over an hour at roughly 250 degrees in a hydrostatic cooker to achieve commercial sterility. Once sterilized the pet food cans are rapidly cooled and dried to be ready for packaging and labeling.



### Line Automation

For the automation of conveying and canning, OEMs and manufacturers work with the widest array of ASCO fluid and motion control solutions. The **AVENTICS Valve Systems with G3 Electronics** intelligently control your pneumatic actuators and air pilot valves. Our select FDA-certified **AVENTICS Corrosion-resistant Cylinders** are designed for easy cleaning, eliminating the risk of food contamination.

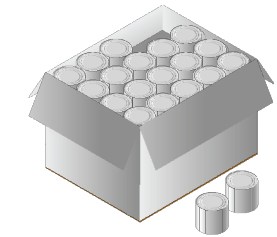
Emerson's **PACSystems** and **PACMotion** platforms provide high speed, scalable and flexible solutions that are easily integrated, leading to faster time to market, increased throughput, and enhanced quality.



### Storing and Conveying

Storage tanks are used in different points of the process; to store finished product, deliver product to filler supply tank, store water and chemicals for CIP processes, etc. Obtain best accuracy and reliable continuous measurement over numerous batches in small buffer tanks with the **Rosemount 1408H Non-Contacting Radar Level Transmitter**.

Conveyor systems move pet food products from mixers, blenders, packaging, and other processes throughout the pet food production facility. Ensure seal integrity and detect defective products before they are packaged with the easy to install and configure **Rosemount CT4215 Packaging Leak Detection System**.



### Packaging and Labelling

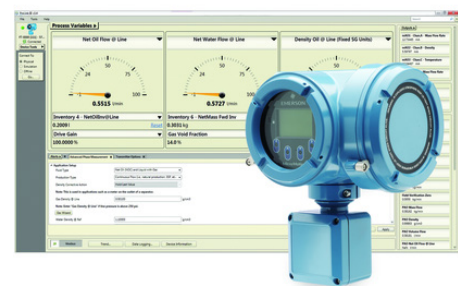
Overcome the challenges associated with the presence of air entrainment and changing flow profiles when transferring pet food to the packaging operations using **Micro Motion Coriolis Flow Meter with Micro Motion 1600 Coriolis Ethernet Transmitter with Advanced Phase Measurement**. Also, ensure filling lines are full and correctly pressurized to provide consistent flow rates to the bottling operations with the **Rosemount 3051HT Hygienic Pressure Transmitter**.

**PACSystems** controllers with **PACMotion** servo and VFD technology address packaging needs by providing a comprehensive solution from capping, filling, labeling, cartoning, and palletizing.



## Featured Products for Packaging

### Micro Motion Advanced Phase Measurement



Micro Motion Advanced Phase Measurement is expertly designed to provide accurate measurement for complex processes and challenging multiphase flow environments.

### PACMotion Servo Motors and Drives



PACMotion combines integrated motion and machine logic with the performance, flexibility and scalability required for advanced machine automation. The PACMotion controller, servo drives and servo motors are designed to work together in applications from a few axes up to 40 axes on a single backplan.

### Rosemount 3051HT Hygienic Pressure Transmitter



Best in class reference accuracy plus up to a 7-year stability ensure the Rosemount 3051HT will deliver precise and repeatable pressure measurements in even the toughest applications. Batch to Batch repeatability testing ensures that pressure measurements will stay within specification even after being subjected to routine, high temperature cleanings.

### Rosemount 1408H Non-Contacting Radar Level Transmitter



The Rosemount 1408H Non-Contacting Radar Level Transmitter has been specifically designed for food and beverage applications and provides continuous liquid level measurement. Featuring 80GHz FMCW Fast Sweep technology and smart algorithms, it provides more information compared to legacy technologies, thus delivering more accurate and reliable measurement signals.

## Featured Products for Packaging

### Micro Motion 1600 Transmitter



With a compact and light design, the 1600 transmitter delivers ease of integration with a native Ethernet connection and Power over Ethernet. A suite of powerful software solutions provides measurement confidence and valuable process insight in the most challenging applications. The data historian feature captures rich information about process events, fluid quality, and measurement stability - over long and short periods of time.

### AVENTICS Cylinders and Motion Controls



The AVENTICS product series offers options such as corrosion resistant cylinders, which are FDA & ISO approved and designed to operate in both splash zone and pet food process areas for easy cleaning. Additionally, the AVENTICS cylinders can be seamlessly integrated to work with an enclosure solution or as a standalone directional control valve, providing a total systems solution for a variety of pet food processing zones.

### Micro Motion F-Series, H-Series and Elite Coriolis Flow Meters



With unmatched flow and density measurement for liquids, Emerson offers a full range of Micro Motion Coriolis flow meters. From the compact and drainable F-Series, the H-Series Hygienic to the ELITE, the full range is designed to deliver accurate, repeatable flow and concentration measurement, and is perfectly suited for specific pet food applications.

### Rosemount CT4215 Packaging Leak Detection System



An in-line system that tests for leaks in modified atmosphere packaging (MAP) for pet food applications. Unidentified leaks can impact product quality and cause waste or spoilage. The Quantum Rosemount Laser technology offers high-speed detection and automatically rejects defective packages from the assembly line. The system is easy to install and configure, minimizing disruption to the production line.





# CIP & Utilities

## CIP & Utilities

With a focus on sustainability, manufacturers are seeking automation solutions to reduce utility costs, energy and water consumption.



### Steam Measurement and Control

Utilize wired or wireless measurements of steam, water (cooling towers, recovery, treatment, reclaim and spent grains utilities, fuel and gas flows throughout the pet food facility to establish a baseline to identify saving targets and achieve regulatory compliance. The solution can include multiple inputs for key sources:

Use Rosemount 3051SF DP Flow Meters, Rosemount 8600 and 8800D Vortex Meters, Rosemount 708 Wireless Acoustic Transmitter with Plantweb Insight™ Steam Trap Application, and the Vanessa Triple Offset ZERO Leakage Valve for steam measurement, control, and quality.



### Water Measurement

Use the Rosemount 8750W Magnetic Flow Meter for water measurement, control, and quality.

For optimal process control, Rosemount liquid analysis products can accurately and reliably measure pH levels, conductivity levels, dissolved oxygen concentration, ozone concentration and chlorine concentration.



### CIP Instrumentation

Micro Motion Fork Density Meter can be used in the blending and concentration control of caustic soda for cleaning.

Rosemount 403 and 225 Conductivity Sensors are ideal for monitoring the cleaning steps and final rinse with broad measurement ranges and sanitary designs.

Use the Rosemount 1408 and 1208 Non-Contacting Radar Transmitters for continuous measurement to control CIP tank levels. Add the Rosemount 2120 Level Switch Vibrating Fork to prevent overfills and dry-runs.



### CIP Solutions

PACSystems edge controller helps automate CIP, resulting in cost reduction, increased safety, and higher equipment availability. Control the CIP Supply System automation with the Keystone K-lok High Performance Butterfly Valve.

ASCO 290 Stainless Steel Valve is suitable for CIP fluid control in demanding conditions.



## Featured Products for CIP & Utilities

### Rosemount 3051SF Differential Pressure (DP) Flow Meters



The Rosemount 3051SF family of differential pressure flow meters offers an accurate and easy to install solution for utility measurement. Available with a Conditioning Orifice for limited straight run applications or Annubar™ primary element for low pressure loss, this flow meter family is ideal for the pet food industry.

### Rosemount 708 Wireless Acoustic Transmitter with Plantweb Insight Steam Trap Application



This device featuring ultrasonic acoustic event detection that mounts externally, provides a cost-effective installation and allows visibility into steam traps and pressure relief valves by accurately communicating acoustic level and temperature data as well as device data. The application software analyzes the device data and identifies steam trap failures such as blow through, flooded, and plugged as well as trends on emissions and energy loss, in an easy-to-use, visual interface.

### Rosemount Magnetic Flow Meters



A full range of Rosemount Magnetic flow meters are available to ensure compatibility in virtually any installation; including pet food, hygienic, utility, and process applications. Magnetic Flowmeters provide device diagnostics, such as Smart Meter Verification, to detect and warn of abnormal situations and monitor the health of the meter. With diagnostics enabled, plant availability and throughput can be improved, and costs through simplified installation, maintenance and troubleshooting can be reduced.

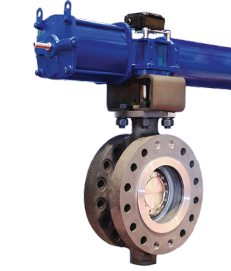
### Rosemount 8600 and 8800D Vortex Meters



The Vortex flow meter product range is designed for utility and process applications. Features include the Adaptive Digital Signal Processing (ADSP) to provide immunity from vibration causing unstable or false flow readings and the robust design enables the sensor to be replaced without down-time. Additionally, input from an external HART® pressure transmitter provides temperature and pressure compensation, enabling compensated mass flow and corrected volume in steam and liquid applications.

## Featured Products for CIP & Utilities

### Vanessa Triple Offset ZERO Leakage Valve



With a robust integral-to-body valve seat and optimized seating angles, this valve is capable of handling isolation and process control through multiple functionalities and is suited for steam isolation.

### ASCO 290 Stainless Steel Valve



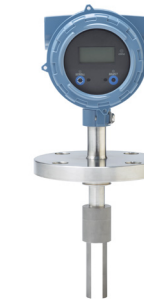
The ASCO Series 290 is a pressure-operated, direct acting angle-body piston solenoid valve built for demanding pet food applications. The valve is suitable for general service applications (air, inert gas, water, oil, and light slurries), plus steam, hot water, and auxiliary fluids within the pet food industry.

### Rosemount 1408 and 1208 Non-Contacting Radar Level Transmitters



Use the Rosemount 1408 or Rosemount 1208 non-contacting radar for continuous measurement to control CIP tank levels. The Rosemount 1208 is a compact and robust all-plastic design radar sensor, and the Rosemount 1408 features a compact and polished stainless-steel housing

### Micro Motion Fork Density Meter



Featuring an innovative new integral transmitter, the fast-response, direct-insertion Micro Motion Fork Density Meter (FDM) offers installation flexibility with continuous, real-time density and concentration measurement in pipelines, bypass loops and tanks.



**Featured Products for CIP & Utilities**

**Rosemount 2120 Level Switch Vibrating Fork**



A level switch that's 3-A and EHEDG approved, easy-to-install with no on-site calibration, the Rosemount 2120 provides reliable, rapid and repeatable point level measurement for high/low level alarm, overflow prevention and pump control/protection. The single-piece fast-drip fork design is resistant to build-up. An adjustable switch delay prevents false switching in turbulent conditions. The robust housing protects the electronics in humid environments. A clearly visible heartbeat LED indicates the process state.

**AVENTICS G3 Electronics Platform**



This next-generation electronic platform permits easy access to connections; it's simple to assemble, install, commission, and maintain. The G3's functionality allows programmable logic controllers to more efficiently turn valves on and off, and to channel I/O data from sensors, lights, relays, individual valves, or other I/O devices via various industrial networks. The G3 is the only pneumatic valve manifold that contains a graphical display used for configuration, commissioning, and diagnostics.

**Keystone Figure 360/362 and 370/372 H-LOK High Performance Butterfly Valve**



This unique two-piece shaft and double-offset disc/shaft design allows for high cycling and creates a lower disc profile with increased capacity and is ideal for CIP supply system.

**TopWorx PD Series Smart Valve Positioner**



The Emerson TopWorx PD Series Smart Valve Positioner provides an intelligent, reliable, and versatile solution for valve control with noncontacting sensor technology. Field calibration and adjustment are simplified with the PD Series LCD interface and the push button or magnetic key controls which enable local control without the need to remove the enclosure cover.

**Featured Products for CIP & Utilities**

**Rosemount 3900 General Purpose pH Sensor**



The Rosemount 3900 General Purpose pH Sensor is ideal for pH measurement of liquids used throughout the manufacturing process. The pH levels of the water coming into the process are monitored to ensure taste while pH levels of the water coming out of the process are measured for regulatory purposes.

**Rosemount 403 and 225 Conductivity Sensors**



The Rosemount 403 Contacting Conductivity Sensor (left) and the Rosemount 225 Toroidal Conductivity Sensor (right) are intended to be used when a sanitary design is required. These sensors are ideal for measuring the concentration of CIP solutions, detecting product/ water interfaces, checking product quality, and monitoring effluents in chromatographic separations.

**Rosemount 499ACL Free Chlorine Sensor**



To ensure the quality of the water coming into the manufacturing process, a low concentration of chlorine may be used to disinfect the water. The Rosemount 499ACL Free Chlorine Sensor can be mounted directly in the process to provide reliable chlorine measurement.

**Rosemount 1058 Dual Channel Transmitter**



Supports continuous measurement of liquid analysis inputs from one or two sensors. Each sensor channel is independently configurable to support a wide selection of digital or analog liquid analysis sensors.



## Emerson's Additional Offerings



## Emerson's Additional Offerings

Services to help you monitor asset health and performance, streamline procurement processes, and train new and existing employees.



### AMS Asset Management

To keep your pet food processing assets available and producing revenue, you need solutions that are custom to the criticality of the asset being monitored and that identify the assets at risk of failure.

Implement predictive intelligence and integrated protection technologies to reach business goals and achieve top-quartile reliability.

With Emerson's AMS technologies, you get asset management and condition indicator capabilities specific to the nature and criticality of production assets.

[Click here to learn more](#)



### Lifecycle Services

Emerson Lifecycle Services provides customers with the expertise, technology and processes that can help you operate safely, improve asset reliability and optimize process capabilities.

Keep your pet food plant operating safely, consistently and economically with the help of our maintenance services. Improve your asset reliability and preserve your investment by utilizing our reliability services. And optimize your plant performance and achieve your pet food production goals with our performance services.

[Click here to learn more](#)



### Education Services & Training

Increase your employees' knowledge and skills with a full range of training options from Emerson's Education Services. Train new hires, arm your workforce with skills that increase their efficiency, and help them to stay current with changing technologies.

Our training offering includes interactive, hands-on courses at our facility or yours, customizable training specific to your organization's needs, or comprehensive and convenient online courses, all designed to develop the critical skills that will enable your staff to help maximize the performance of your pet food plant.

[Click here to learn more](#)



### MyEmerson

Simplify and accelerate work processes by connecting people and technology in a collaborative environment. MyEmerson accelerates digital transformation by connecting people and technology through streamlined work processes in a collaborative environment.

Quickly engineer solutions, manage software and installed assets, collaborate with experts, and streamline procurement processes to achieve measurement improvement in speed and productivity. MyEmerson is more than a place to order products and parts, it is an interconnected, personalized digital experience.

[Click here to learn more](#)



# Get started



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With the most complete automation solutions expertise and offering suite for the industry, Emerson is the supplier of choice to simplify and scale your pet food operations. Getting started is easy. Just contact us now for world-class technologies and services that can maximize your return on investment.

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