

Fluid Control & Pneumatics



INDUSTRIAL &
COMMERCIAL



PROCESS



MACHINE
AUTOMATION



ANALYTICAL &
MEDICAL

Business Overview | 2019

The Power of One Emerson

Three years ago, we introduced a bold, new vision for the future of Emerson: two complementary platforms to focus our expertise around our core strengths – Automation Solutions and Commercial & Residential Solutions.

As a unified company, we are seeing that vision come to life and celebrating the strategic wins our repositioning made possible.

Emerson Annual Report 2018



DAVID N. FARR
Chairman & CEO

2018 Emerson At-A-Glance

FOUNDED

1890

HEADQUARTERS IN
ST. LOUIS, MO
USA

RECOGNITION

#**178**

2018
FORTUNE 500
AMERICA'S
LARGEST
CORPORATIONS
BY REVENUE

Top 50 Employers
WOMEN ENGINEERS
MAGAZINE

**America's Best
Employers**
FORBES MAGAZINE

TWO BUSINESS PLATFORMS



WORLDWIDE

87,500
EMPLOYEES

215
MANUFACTURING
LOCATIONS

INNOVATION

EMERSON EMPLOYEES HELD

18,000 ACTIVE PATENTS
WORLDWIDE IN 2018

\$17.4
BILLION

IN GLOBAL SALES
FISCAL YEAR 2018

62
YEARS

CONSECUTIVE
YEARS OF
INCREASED
DIVIDENDS

NYSE:
EMR

Core Business Platforms

We concentrate on the most complex and important challenges facing the world in the process, industrial, commercial and residential markets.



EMERSON AUTOMATION SOLUTIONS

- Making the greatest use of the world's valuable resources
- Helping nations move their economies forward in a responsible way
- Enabling the performance and safety of industry when it matters most
- Advancing the industries that are the backbone of daily life



EMERSON COMMERCIAL & RESIDENTIAL SOLUTIONS

- Ensuring human comfort and health
- Protecting food quality and sustainability
- Advancing energy efficiency and environmental conservation
- Creating sustainable infrastructure
- Continuing momentum at our Helix Innovation Center



Emerson Automation Solutions

Improving Process and Industrial Manufacturing Performance with Measurable Results

Industries Served include

Oil and Gas/Refining
Chemical
Power
Food and Beverage
Metals and Mining
Water and Wastewater
Life Sciences
Automotive
Electronics

Core Expertise & Key Brands

Industrial Internet of Things

- Plantweb

Systems and Asset Management

- DeltaV
- Ovation

Measurement Instrumentation

- Rosemount
- Micro Motion

Fluid Control & Pneumatics

- ASCO
- AVENTICS

Valves, Actuators and Regulators

- Bettis
- Crosby
- Fisher
- TopWorx
- Keystone
- KTM
- Vanessa
- TESCO

Welding, Assembly & Cleaning

- Branson

Electrical & Lighting

- Appleton

Industry Services and Solutions

Emerson's Values Guide How We Do Business

integrity We are uncompromising in our honest and ethical behavior, which creates trusting relationships with one another, customers, suppliers, and communities.

safety & quality We are unwavering in our commitment to the highest standards of safety and quality for ourselves and our customers.

support our people We attract, develop, and retain exceptional people in an inclusive work environment, where all employees can reach their greatest potential.

customer focus We actively listen to our customers to deeply understand their needs and deliver the unique solutions that ensure their success.

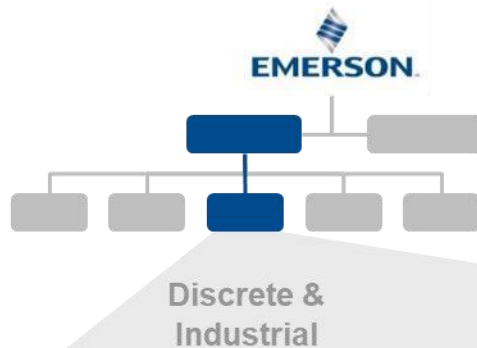
continuous improvement We constantly strive for improvement in all aspects of our business, guided by metrics, feedback, and our disciplined management process.

collaboration We work seamlessly across geographies, platforms, business units, and functions to fully leverage our unmatched breadth and expertise.

innovation We passionately pursue new technologies, capabilities, and approaches to drive tangible value for our customers.

When we act as One Emerson, guided by One set of values, we will be able to completely deliver on our customer promise – Consider It Solved.

Our Broad Portfolio & Capabilities Enable Emerson To Deliver Unique and Differentiated Solutions



Welding, Assembly & Cleaning

Welding and cleaning solutions designed to meet the application needs of your manufacturing processes and laboratory environments.



Electrical & Lighting

Trusted, rugged electrical solutions ensuring safety and productivity within industrial, commercial and hazardous environments across the world.



Fluid Control & Pneumatics

Fluid control and pneumatic products that deliver the innovation, reliability, and speed demanded industries and applications, from Oil & Gas to Packaging.

Our Products:

- Solenoids
- Pneumatic Valves
- Precision Fluid Control
- Cylinders & Actuators
- Valve Position Indicators

Our Brands:

ASCO™

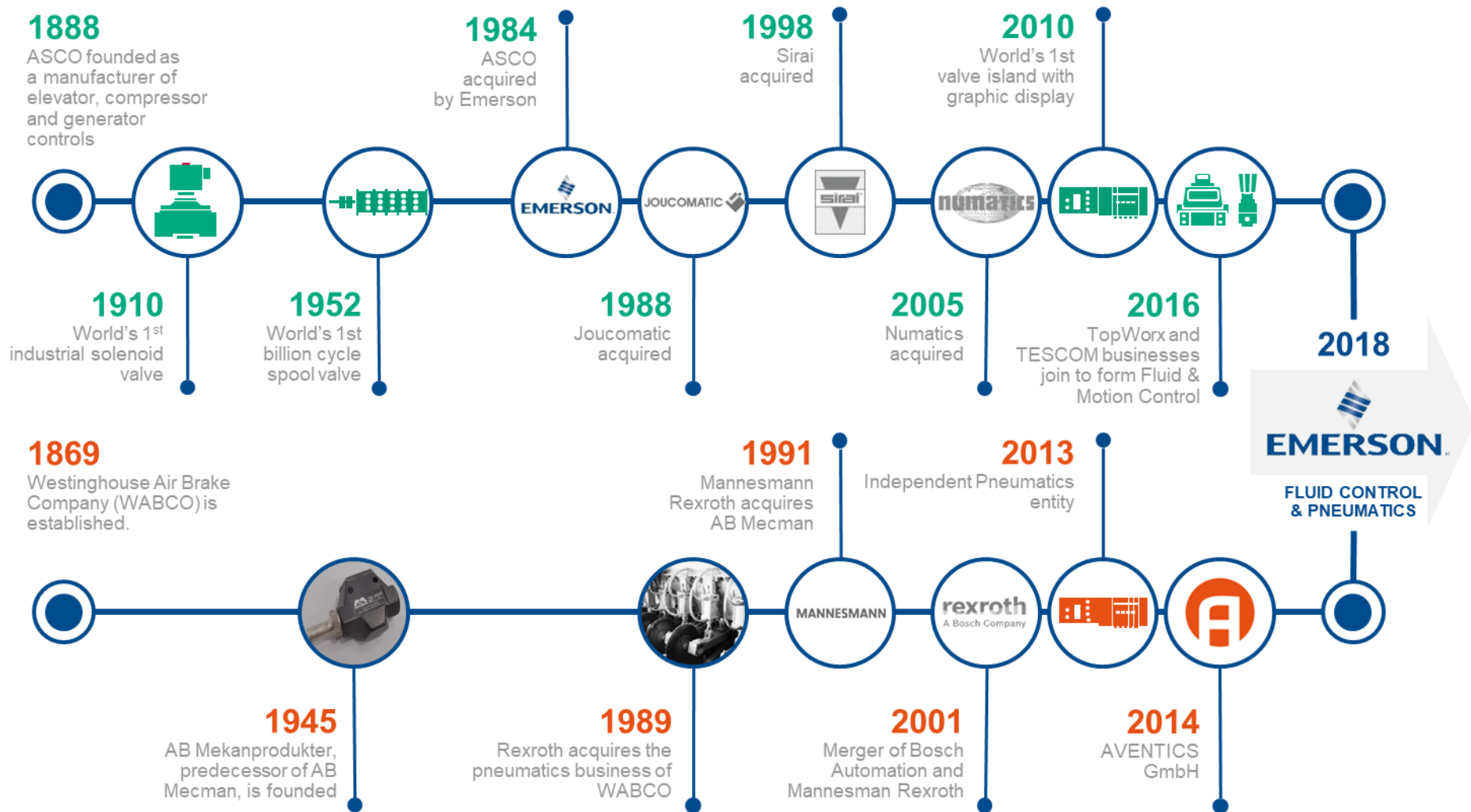
AVENTICS™

TESCOM™

TOPWORX™

Fluid Control & Pneumatics

Fluid Control & Pneumatics Business History



A Respected Heritage of Fluid Control & Pneumatics Solutions

Our Fluid Control & Pneumatics Portfolio



ASCO™

FLUID CONTROL

Controlling the flow of air, gas, water, oil and steam in the most critical applications

- Solenoids
- Air Operated Valves
- Miniature Valves
- Engineered Panel Solutions



AVENTICS™

PNEUMATICS

Transforming pressurized air or gas into energy and motion to power machines

- Valve Systems & Directional Control
- Proportional Valves
- Cylinders & Actuators
- Air Preparation
- Machine Safety
- Pneumatic Systems & Cabinets
- Connectivity and IIoT



TESCOM™

PRECISION FLUID CONTROL

Providing fluid and pressure management solutions for the most critical applications

- High Pressure & Precision Regulators
- Manual and Air Operated Valves
- Instrumentation Isolation & Manifolds
- Changeover Manifolds
- Electropneumatic Controllers
- Engineered Systems Solutions



TOPWORX™

POSITION SENSING & INDICATION

Sensing, switching and control for the most demanding environments

- Proximity Sensors
- Limit Switches
- Discrete Valve Controllers
- Nuclear Approved Products
- Subsea Products

Our Signature Brands in the Category Fluid Control & Pneumatics

Emerson Signature Brands represent category leadership in the markets we serve. They define our capability to simplify customers' understanding of our value, reflect value up to Emerson and act as proof points of category ownership

Value Proposition Statement	Applied industry expertise and clever solutions to deliver today and tomorrow			
Pillars	Product Offerings	Value-Added Services	Buying Experience	Customer Experience
	Best-fit solutions and connected technologies that optimize customer applications for lasting performance	Forward-thinking understanding of customer needs and proactive problem solving to deliver the right solutions	Simplified customer journey from pre- to post-purchase with accessible online information and on-call experts	Consultative, partnering approach to understanding diverse industry-specific needs with a commitment to continuous improvement

ASCO™

STRATEGIC ROLE:

High-performing, reliable products that ensure customers' operations always run smoothly

PRODUCT SCOPE: Fluid Control

MANUFACTURING EMPHASIS: Industrial & Process, Hybrid

AVENTICS™

STRATEGIC ROLE:

Future-forward and smart technologies that help transform and evolve manufacturing systems

PRODUCT SCOPE: Pneumatics

MANUFACTURING EMPHASIS: Discrete & Hybrid



Two Signature Brands Built On Firm Principles of Performance and Value

ASCO™

Brand Promise: Relentlessly delivering optimized performance and enduring operation

Principles: Unmatched Reliability Engineered to Perform Best Fit Products

Leading reliability, durability, and quality as the global performance standard in fluid control

Proven product innovation and application expertise to exceed exacting standards

Unequaled breadth and diverse expertise ensuring the right products matched to your unique applications

AVENTICS™

Brand Promise: Enabling smarter solutions to maximize efficiency and harness the potential of connected operations

Principles: Adaptive Design Intuitive Experience Dynamic Insights

State-of-the-art pneumatics products designed to easily integrate and flex with your applications

Powerful yet accessible technologies with intuitive interface and configuration

Continuous data exchange delivering targeted, accessible, and relevant insights



Delivering Breadth & Applied Expertise to any Industry

Recognized capabilities across industries to provide the performance results you need



INDUSTRIAL

- Combustion
- Industrial Machinery
- Dust Collector
- Manufacturing & Test
- Commercial Vehicle
- Aerospace
- Marine
- Rail
- Laboratory R&D



PROCESS

- Oil & Gas
- Chemicals
- Refining
- Nuclear
- Food & Beverage
- Life Science
- Alternative Energy
- Metals & Mining
- Water & Wastewater



ANALYTICAL & MEDICAL

- Clinical Diagnostics
- Bioinstrumentation
- Surgical Instruments
- Industrial Analyzers
- Ventilators
- Oxygen Therapy



MACHINE AUTOMATION

- Packaging
- Automotive
- Tire Manufacturing
- PET & Glass Blowing
- Machinery & Machine Tool
- Semiconductor
- Electronics



Process Served Sub-Segments



Oil & Gas

- Onshore / Offshore Exploration & Production
- Pipelines & Terminals



Refining & Chemical

- Refineries
- Petrochemical
- Chemical
- Fine Chemical



Food & Beverage

- Dairy
- Beverage
- Grains and Powders



Life Sciences

- Active Pharmaceutical Ingredient(API)
- Synthetic Drugs
- Biopharma

Other Served Sub-Segments:

Power, Nuclear, Water & Wastewater, Pulp & Paper, Metals, Mining

Industrial Served Sub-Segments



Machinery & Dust Collection

- Conveying
- Plastics
- Heating/Cooling Equipment
- Baghouse Pulse Cleaning
- Fans & Blowers



Combustion

- Burner/Boilers
- Grain Dryers
- Ovens, Furnaces
- Gas Trains



Manufacture & Test

- Component Calibration & Test
- Product Cycling & Proof Testing



Aerospace & Defense

- Automated Test Stations
- Pressure Controller Logic
- Rocket Fueling Control

Other Served Sub-Segments:

Engine transmissions, Pumps & Compressors, Food Equipment, Sterilizers, Dish laundry, Water conditioning, Machinery, Agriculture, HVAC, Plumbing, Cleaning, Diving & Life Support, Manufacturing & Test, Laboratory, R&D, Alternative Fuels

Machine Automation Served Sub-Segments



Automotive

- Conveying Equipment
- Assembly Lines
- Automotive Components



Tire Industry

- Press & Production Line
- Handling Equipment



Packaging

- Case Form & Sealing
- Filling Stations
- Case Erectors & Packers



PET & Glass Blowing

- PET & Glass Blowing Lines
- Cleaning Systems

Other Served Sub-Segments:

Material Handling, Machine Tool, Semiconductor Assembly and Testing, Electronics, Paper, Plastics, Special Machinery, Metal Working Machinery

Medical & Analytical Served Sub-Segments



Clinical Diagnostics

- Immunoassay
- Hematology
- Sample Preparation



Bio-Instrumentation

- DNA Sequencing
- PCR (DNA sample prep)
- Genotyping



Ventilators

- Critical Care Ventilators
- Infant Incubators
- Anesthesia Delivery



Industrial Analyzers

- Emission Analyzers
- Mass Flow Controllers
- Water analyzers

Other Served Sub-Segments:

Hemodialysis, Surgical Instruments, Dental, Chromatographs, Sterilizers.
Oxygen Therapy, Patient Monitoring, Therapy Equipment

Commitment to Unmatched Customer Service and Ease of Doing Business

Exceptional Speed & Service

Our Express program features the **right fluid control products, right when** you need them.

Express shipments from 1 to 5 days



- Online order and configure
- Online support resources
- Onsite support within 24 hours
- Over 2,000 products available for Same Day Shipment

Time-saving Engineering Tools

Calculate and **Optimize** sizing for pneumatic products, **explore** alternative solutions, and **identify** energy-efficient accessories.



- Configurators
- CylinderFinder
- CAD Search
- Cross Reference Tool
- Circuit Diagram Software

Commitment to the Highest Quality and Reliability

Emerson's Manufacturing Capability

Quality Management Leadership

- ISO 9001
- 6-sigma
- Lean Manufacturing
- Global Standards & Certifications

High satisfaction ratings for **reliability** and **quality**

Certified test data facility for **UL** and **CSA**



RECOGNITIONS & CERTIFICATIONS



6σ



10 CFR 50 Appendix B
10 CFR Part 21
ISO 10012-1
ISO17025
ANSI Z 540-1

Emerson Maintains a Quality Management System and a Controlled Manufacturing Process In the Design and Construction of Our Products



**WE SEE
THE STRENGTH OF ONE EMERSON**