EMERSON ELECTRIC CO
Form 10-K
November 19, 2018

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

ý ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended September 30, 2018

OR

¨ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from ____________________ to __________________
Commission file number 1-278

EMERSON ELECTRIC CO.
(Exact name of registrant as specified in its charter)

Missouri	43-0259330
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
8000 W. Florissant Ave. P.O. Box 4100 St. Louis, Missouri	63136
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (314) 553-2000

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock of $0.50 par value per share	New York Stock Exchange Chicago Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ý No ¨

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ¨ No ý

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ý No ¨

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ý No ¨

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ý

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer ý	Accelerated filer ¨
Non-accelerated filer ¨	Smaller reporting company ¨
	Emerging growth company ¨

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes ¨ No ý

Aggregate market value of the voting stock held by nonaffiliates of the registrant as of close of business on March 31, 2018: $42.9 billion.

Common stock outstanding at October 31, 2018: 626,158,598 shares.

Documents Incorporated by Reference

1. Portions of Emerson Electric Co. Notice of 2019 Annual Meeting of Shareholders and Proxy Statement incorporated by reference into Part III hereof.

PART I

ITEM 1 - BUSINESS

Emerson (“the Company”) was incorporated in Missouri in 1890, and has evolved through internal growth and strategic acquisitions and divestitures from a regional manufacturer of electric motors and fans into a global leader that brings technology and engineering together to provide innovative solutions for customers in a wide range of industrial, commercial and consumer markets around the world. Total Emerson sales by geographic destination in 2018 were: the United States and Canada, 49 percent; Asia, 23 percent; Europe, 17 percent; Latin America, 5 percent; and Middle East/Africa, 6 percent.

In connection with the strategic portfolio repositioning actions undertaken to transform the Company into a more focused enterprise, its businesses and organization were realigned. In fiscal 2017, the Company began reporting three segments: Automation Solutions, and Climate Technologies and Tools & Home Products which together comprise the Commercial & Residential Solutions business. A summary of the Company's businesses is described below.

- Automation Solutions - enables process, hybrid and discrete manufacturers to maximize production, protect personnel and the environment, and optimize their energy efficiency and operating costs through a broad offering of products and integrated solutions, including measurement and analytical instrumentation, industrial valves and equipment, and process control systems.

- Commercial & Residential Solutions - provides products and solutions that promote energy efficiency, enhance household and commercial comfort, and protect food quality and sustainability through heating, air conditioning and refrigeration technology, as well as a broad range of tools and appliance solutions.

In 2017, the Company's strategic portfolio repositioning actions resulted in the sale of the network power systems business and the sale of the power generation, motors and drives business. These businesses have been reported in discontinued operations for all periods presented until disposal. The Company's process of transforming its Automation Solutions and Commercial & Residential Solutions businesses was ongoing as these repositioning actions were being completed. On April 28, 2017, the Company completed the acquisition of Pentair's valves & controls business, which is reported in the Automation Solutions segment and complements the Valves, Actuators & Regulators product offering. In 2018, the Company continued to expand the product offerings within its two businesses. This included the acquisitions of Paradigm, a provider of software solutions for the oil and gas industry, and Aventics, a global provider of smart pneumatics technologies, which are reported in Automation Solutions. The Company also made two strategic acquisitions to strengthen its Commercial & Residential Solutions business: Textron's tools and test equipment business, a manufacturer of electrical and utility tools, diagnostics, and test and measurement instruments, and Cooper-Atkins, which offers temperature management and monitoring products for foodservice markets. In the first quarter of 2018 the Company also completed the sale of its residential storage business. Information with respect to acquisition and divestiture activity, including the discontinued businesses, is set forth in Notes 3 and 4. These references and all other Note references in this document refer to Notes to Consolidated Financial Statements set forth in Item 8 of this Annual Report on Form 10-K, which notes are hereby incorporated by reference. See also Item 1A - “Risk Factors” and Item 7 - “Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

AUTOMATION SOLUTIONS

The Automation Solutions segment offers a broad array of products, integrated solutions, software and services which enable process, hybrid and discrete manufacturers to maximize production, protect personnel and the environment, reduce project costs, and optimize their energy efficiency and operating costs. Significant markets served include oil and gas, refining, chemicals and power generation, as well as pharmaceuticals, food and beverage, automotive, pulp and paper, metals and mining, and municipal water supplies. The segment’s major product offerings are Measurement & Analytical Instrumentation, Valves, Actuators & Regulators, Industrial Solutions and Process Control Systems & Solutions, which are further described below.

Across these product offerings, Automation Solutions offers the Plantweb ™ Digital Ecosystem, a comprehensive Industrial Internet of Things (IIoT) architecture that combines intelligent field sensors, communication gateways and controllers, software, and complementary partner technologies. This IIoT architecture delivers measurable business performance improvements to customers by providing insights into production performance, energy consumption,

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reliability of specific equipment or process units, and safety. Together with the broad offering of products and integrated solutions, Automation Solutions also provides a portfolio of services and lifecycle service centers which offer consulting, engineering, systems development, project management, training, maintenance, and troubleshooting expertise to aid in process optimization. Sales by geographic destination in 2018 for Automation Solutions were: the United States and Canada, 43 percent; Asia, 24 percent; Europe, 20 percent; Latin America, 5 percent; and Middle East/Africa, 8 percent.

Measurement & Analytical Instrumentation

Measurement instrumentation measures the physical properties of liquids or gases in a process stream, such as pressure, temperature, level, rate and amount of flow, and communicates this information to a process control system or other software applications. Measurement technologies provided by the Company include Coriolis direct mass flow, magnetic flow, vortex flow, ultrasonic flow, differential pressure, ultra-low flow fluid measurement, corrosion measurement, acoustic measurement, temperature sensors, radar-based tank gauging and magnetic level gauging. The Company’s measurement products are often used in custody transfer applications, such as the transfer of gasoline from a storage tank to a tanker truck, where precise metering of the amount of fluid transferred helps ensure accurate asset management. Complementary products include onshore and subsea multi-phase meters, wet gas meters, downhole gauges and corrosion/erosion measuring instruments.

Analytical instrumentation analyzes the chemical composition of process fluids and emissions to enhance quality and efficiency, as well as environmental compliance. The Company’s analytical technologies include process gas chromatographs, in-situ oxygen analyzers, infrared gas and process fluid analyzers, combustion analyzers and systems, and analyzers that measure pH, conductivity and water quality. The Company provides sensors to detect combustible and toxic gases, and flames. These devices support the safety of both people and process plant assets.

Measurement and analytical instrumentation technologies are also available with highly secure and reliable wireless communication capability, allowing customers to monitor processes or equipment that were previously not measurable (remote, moving/rotating) or not economical to measure due to the high cost and difficulty of running wires in industrial process plants.

On December 1, 2017, the Company acquired Paradigm, enhancing its software solutions offerings in the oil and gas industry. This technology creates a more comprehensive digital portfolio from exploration to production and enables Emerson to help oil and gas operators increase efficiency and reduce costs. See Note 3.

Valves, Actuators & Regulators

The primary role of an industrial valve is to control, isolate, or regulate the flow of liquids or gases to achieve safe operation along with reliability and optimized performance.

Control, isolation and pressure relief valves respond to commands from a control system to continuously and precisely modulate the flow of process fluids. Engineered on/off valves are typically used to achieve tight shutoff, even in high pressure and temperature processes. The Company designs, engineers and manufactures ball, gate, globe, check, sliding stem, rotary, high performance butterfly, triple offset, and severe services valves for critical applications. The Company also designs and manufactures sophisticated smart actuation and control technologies that continuously monitor valve health and remotely control valve positions to foster proactive and predictive maintenance as well as decrease the risk of unplanned shutdowns.

The Company provides pressure management products, including pressure relief, vacuum relief, and gauge valves designed to control fugitive emissions. The Company also supplies a line of industrial and residential regulators, whose function is to reduce the pressure of fluids moving from high-pressure supply lines into lower pressure systems, and also manufactures tank and terminal safety equipment, including hatches, vent pressure and vacuum relief valves, and flame arrestors for storage tanks in the oil and gas, petrochemical, refining and other process industries.

On April 28, 2017, the Company acquired Pentair’s valves & controls business, which manufactures control, isolation and pressure relief valves and actuators. These products complement Emerson’s existing offerings, creating a comprehensive valve solutions portfolio that is supported by an extensive service network. See Note 3.

Industrial Solutions

Industrial Solutions include fluid control and pneumatic mechanisms, electrical distribution equipment, materials joining solutions and precision cleaning products which are used in a variety of manufacturing operations to provide integrated solutions to customers. Pneumatic products transform air or gas into energy and power for use in manufacturing operations such as food processing and packaging, life sciences and petrochemical processing. Products include solenoid and pneumatic valves, valve position indicators, pneumatic cylinders and actuators, air preparation equipment, and pressure, vacuum, temperature switches and automobile assembly. Electrical distribution consists of a broad line of components for current- and noncurrent-carrying electrical distribution devices, including conduit and cable fittings, plugs and other receptacles, industrial lighting, enclosures and controls. Electrical distribution products are used in hazardous, industrial and commercial environments, such as oil and gas drilling and production sites, petrochemical plants and commercial buildings. Plastic and metal joining technologies and equipment are supplied to a diversified manufacturing customer base, including automotive, medical devices, business and consumer electronics, and textile manufacturing. The Company also provides precision cleaning and liquid processing solutions to industrial and commercial manufacturers. Products include ultrasonic joining and cleaning equipment; linear and orbital vibration welding equipment; systems for hot plate, spin and laser welding; and aqueous, semi-aqueous and vapor cleaning systems.

On July 17, 2018, the Company completed the acquisition of Aventics, a global provider of smart pneumatics technologies that power machine and factory automation applications. This acquisition significantly expands Emerson’s fluid automation technologies for process and industrial applications. See Note 3.

Process Control Systems & Solutions

The Company provides process control systems and software that control plant processes by collecting and analyzing information from measurement devices in the plant, and then use that information to adjust valves, pumps, motors, drives and other control hardware for maximum product quality and process efficiency and safety. Software capabilities also include life sciences operations management, upstream oil and gas reservoir simulation and production optimization modeling, pipeline and terminal management, operations management simulation, and training systems. The Company’s process control systems can be extended wirelessly to support a mobile workforce with handheld tools/communicators, provide site-wide location tracking of people and assets, and enable video monitoring and communication with wireless field devices, thereby increasing the information available to operators.

Distribution

The principal worldwide distribution channel for Automation Solutions is a direct sales force, although a network of independent sales representatives, and to a lesser extent independent distributors purchasing products for resale, are also utilized. Approximately half of the sales in the United States are made through a direct sales force with the remainder primarily through independent sales representatives and distributors. In Europe and Asia, sales are primarily made through a direct sales force with the remainder split evenly between independent sales representatives and distributors.

Brands

Service/trademarks and trade names within (but not exclusive to) Automation Solutions include Emerson Automation Solutions, Appleton, ASCO, Aventics, Bettis, Branson, DeltaV, Fisher, Keystone, KTM, Micro Motion, Ovation, Plantweb, Rosemount and Vanessa.

COMMERCIAL & RESIDENTIAL SOLUTIONS

The Commercial & Residential Solutions business consists of the Climate Technologies and Tools & Home Products segments, and provides products and solutions that promote energy efficiency, enhance household and commercial comfort, and protect food quality and sustainability through heating, air conditioning and refrigeration technology, as well as a broad range of tools and appliance solutions. Sales by geographic destination in 2018 for Commercial & Residential Solutions were: the United States and Canada, 61 percent; Asia, 20 percent; Europe, 11 percent; Latin America, 5 percent; and Middle East/Africa, 3 percent.

CLIMATE TECHNOLOGIES

The Climate Technologies segment provides products and services for many areas of the climate control industry, including residential heating and cooling, commercial air conditioning, commercial and industrial refrigeration, and cold chain management. The Company's technologies enable homeowners and businesses to better manage their heating, air conditioning and refrigeration systems for improved control and comfort, and lower energy costs. Climate Technologies also provides services that digitally control and remotely monitor refrigeration units in grocery stores and other food distribution outlets to enhance food freshness and safety, as well as cargo and transportation monitoring solutions. Sales by geographic destination in 2018 for Climate Technologies were: the United States and Canada, 54 percent; Asia, 25 percent; Europe, 10 percent; Latin America, 7 percent; and Middle East/Africa, 4 percent.

Residential and Commercial Heating and Air Conditioning

The Company provides a full range of heating and air conditioning products that help reduce operational and energy costs and create comfortable environments in all types of buildings. These products include reciprocating and scroll compressors, including ultra-efficient residential scroll compressors with two stages of cooling capacity, as well as variable speed scroll compressors; system protector and flow control devices; standard, programmable and Wi-Fi thermostats; monitoring equipment and electronic controls for gas and electric heating systems; gas valves for furnaces and water heaters; ignition systems for furnaces; sensors and thermistors for home appliances; and temperature sensors and controls.

Commercial and Industrial Refrigeration

Commercial and industrial refrigeration technologies are incorporated into equipment to refrigerate food and beverages in supermarkets, convenience stores, food service operations, refrigerated trucks and refrigerated marine transport containers. Climate Technologies refrigeration products are also used in a wide variety of industrial applications, including medical applications, food processing and cold storage. Products include reciprocating, scroll and screw compressors; precision flow controls; system diagnostics and controls that provide precise temperature management; and environmental control systems. Transport and cargo monitoring solutions are also offered, which extend throughout the cold chain to ensure quality and safety as food travels from growers to processing and distribution facilities, and finally to retail points of sale.

Services and Solutions

Services and solutions provides air conditioning, refrigeration and lighting control technologies that enable global customers to optimize the performance of facilities, including large-scale retailers, supermarkets, convenience stores and food service operations. The Company’s expertise allows customers to reduce energy and maintenance costs, thereby improving overall facility efficiency and uptime. In addition to industry-leading controls, services include facility design and product management, site commissioning, facility monitoring and energy modeling.

In 2018, the Company completed an acquisition to expand its cold chain portfolio of products and services to include temperature management and monitoring products for foodservice markets.

Distribution

Climate Technologies' sales, primarily to original equipment manufacturers and end users, are made predominately through worldwide direct sales forces. Remaining sales are primarily through independent distributor networks throughout the world.

Brands

Service/trademarks and trade names within (but not exclusive to) the Climate Technologies segment include Emerson Commercial & Residential Solutions, Emerson Climate Technologies, Cooper-Atkins, Copeland, CoreSense, Dixell, Fusite, ProAct, Sensi, Therm-O-Disc, Vilter and White-Rodgers.

TOOLS & HOME PRODUCTS

The Company’s Tools & Home Products segment offers tools for professionals and homeowners and appliance solutions. Sales by geographic destination in 2018 for this segment were: the United States and Canada, 81 percent; Asia, 5 percent; Europe, 11 percent; Latin America, 2 percent; and Middle East/Africa, 1 percent.

Professional Tools

Pipe-working tools are used by plumbing and mechanical professionals to install and repair piping systems. Products include pipe wrenches, pipe cutters, pipe threading and roll grooving equipment, mechanical crimping tube joining systems, drain cleaners, tubing tools, and diagnostic systems, including closed-circuit television pipe inspection and locating equipment. Electrical tools are used by industry professionals for numerous tasks related to the installation of wire and cable, including bending, termination and hole-making. Other professional tools include water jetters, wet-dry vacuums, commercial vacuums and bolt cutters. The Company also offers do-it-yourself tools, available at retail home improvement outlets, which include drain cleaning equipment, pipe and tube working tools, and wet-dry vacuums.

On July 2, 2018, the Company completed the acquisition of Textron’s tools and test equipment business, which manufactures electrical and utility tools, diagnostics, and test and measurement instruments. These products expand Emerson’s professional tools business, creating a broad offering for mechanical, electrical and plumbing contractors. See Note 3.

Appliance Solutions

The Company provides a number of appliance solutions, including residential and commercial food waste disposers, ceiling fans, instant hot water dispensers and compact electric water heaters.

Distribution

The principal worldwide distribution channels for Tools & Home Products are distributors and direct sales forces. Professional tools are sold worldwide almost exclusively through distributors. Appliance solutions are sold through direct sales force networks, distributors and online retailers. Approximately one-third of this segment's sales are made to a small number of big box retail outlets.

Brands

Service/trademarks and trade names within (but not exclusive to) the Tools & Home Products segment include Emerson, Emerson Professional Tools, Badger, Greenlee, Grind2Energy, InSinkErator, Klauke, ProTeam and RIDGID.

On October 2, 2017, the Company sold its residential storage business. See Note 3.

DISCONTINUED OPERATIONS

The network power systems business and the power generation, motors and drives business were sold in 2017 and are reported as discontinued operations in the Consolidated Financial Statements for all years presented until disposal. See Note 4.

PRODUCTION

The Company utilizes various production operations and methods. The principal production operations are electronics assembly, metal stamping, forming, casting, machining, welding, plating, heat treating, painting and assembly. In addition, the Company uses specialized production operations, including automatic and semiautomatic testing, automated material handling and storage, ferrous and nonferrous machining, and special furnaces for heat treating and foundry applications. Management believes the equipment, machinery and tooling used in these processes are of modern design and well maintained.

RAW MATERIALS

The Company's major requirements for basic raw materials include steel, copper, cast iron, electronics, rare earth metals, aluminum and brass; and to a lesser extent, plastics and petroleum-based chemicals. The Company seeks to have many sources of supply for each of its major requirements in order to avoid significant dependence on any one or a few suppliers. However, the supply of materials or other items could be disrupted by natural disasters or other events. Despite market price volatility for certain materials and pricing pressures at some of our businesses, the raw materials and various purchased components needed for the Company’s products have generally been available in sufficient quantities.

PATENTS, TRADEMARKS AND LICENSES

The Company maintains an intellectual property portfolio it has developed or acquired over a number of years, including patents, trademarks and licenses. The Company also continues to develop or acquire new intellectual property. New patent applications are continuously filed to protect the Company’s ongoing research and development activities. The Company’s trademark registrations may be renewed and their duration is dependent upon national laws and trademark use. While this proprietary intellectual property portfolio is important to the Company in the aggregate, management does not regard any of its segments as being dependent on any single patent, trademark registration or license.

BACKLOG

The Company’s estimated consolidated order backlog was $4,966 million and $4,894 million at September 30, 2018 and 2017, respectively. A large majority of the consolidated backlog as of September 30, 2018 is expected to be shipped within one year. Backlog by business at September 30, 2018 and 2017 follows (dollars in millions).

	2017	2018
Automation Solutions	$4,414	4,473
Commercial & Residential Solutions	480	493
Total Backlog	$4,894	4,966

COMPETITION

The Company's businesses operate in highly competitive markets. The Company competes based on product performance, quality, branding, service and/or price across the industries and markets served. A significant element of the Company's competitive strategy is to deliver solutions to our customers by manufacturing high-quality products at the best relevant global cost. Although no single company competes directly with Emerson in all of the Company's product lines, various companies compete in one or more product lines with the number of competitors varying by product line. Some competitors have substantially greater sales, assets and financial resources than Emerson and the Company also competes with many smaller companies. Management believes Emerson has a market leadership position in many of its product lines.

ENVIRONMENT

The Company's manufacturing locations generate waste, of which treatment, storage, transportation and disposal are subject to U.S. federal, state, foreign and/or local laws and regulations relating to protection of the environment. Compliance with laws regulating the discharge of materials into the environment or otherwise relating to protection of the environment has not had a material effect on the Company's capital expenditures, earnings or competitive position. The Company does not anticipate having material capital expenditures for environmental control facilities during the next fiscal year.

EMPLOYEES

The Company and its subsidiaries had approximately 87,500 employees at September 30, 2018. Management believes that the Company's employee relations are favorable. Some of the Company's employees are represented under collective bargaining agreements, but none of these agreements are considered significant.

INTERNET ACCESS

Emerson's reports on Forms 10-K, 10-Q, 8-K and all amendments to those reports are available without charge through the Company’s website on the internet as soon as reasonably practicable after they are electronically filed with, or furnished to, the U.S. Securities and Exchange Commission (SEC). They may be accessed as follows: www.Emerson.com, Investors, SEC Filings. Information on the Company’s website does not constitute part of this Form 10-K.

The information set forth under Item 1A - “Risk Factors” is hereby incorporated by reference.

ITEM 1A - RISK FACTORS

Investing in our securities involves risks. We may amend or supplement the risk factors described below from time to time by other reports we file with the SEC.

We Operate in Businesses That Are Subject to Competitive Pressures That Could Affect Prices or Demand for Our Products

Our businesses operate in markets that are highly competitive and potentially volatile, and we compete on the basis of product performance, quality, service and/or price across the industries and markets served. Our businesses are largely dependent on the current and future business environment, including capital and consumer spending. A significant element of our competitive strategy is to deliver solutions to our customers by manufacturing high-quality products at the best relevant global cost. Various companies compete with us in one or more product lines and the number of competitors varies by product line. Some of our competitors have substantially greater sales, assets and financial resources than our Company and we also compete with many smaller companies. Competitive pressures could adversely affect prices or customer demand for our products, impacting our sales or profit margins, and/or resulting in a loss of market share.

Our Operating Results Depend in Part on Continued Successful Research, Development and Marketing of New and/or Improved Products and Services, and There Can Be No Assurance That We Will Continue to Successfully Introduce New Products and Services

The success of new and improved products and services depends on their initial and continued acceptance by our customers. Our businesses are affected by varying degrees of technological change and corresponding shifts in customer demand, which result in unpredictable product transitions, shortened life cycles and increased importance of being first to market with new products and services. We may experience difficulties or delays in the research, development, production and/or marketing of new products and services which may negatively impact our operating results and prevent us from recouping or realizing a return on the investments required to continue to bring new products and services to market.

If We Are Unable to Defend or Protect Our Intellectual Property Rights the Company's Competitive Position Could Be Adversely Affected

The Company's intellectual property rights are important to its business and include numerous patents, trademarks, copyrights, trade secrets and other confidential information. This intellectual property may be subject to challenge, infringement, invalidation or circumvention by third parties. Despite extensive security measures, our intellectual property may be subject to misappropriation through unauthorized access of our information technology systems, employee theft, or other acts of industrial espionage. Should the Company be unable to adequately defend or protect its intellectual property, it may suffer competitive harm.

We Engage in Acquisitions and Divestitures, Which Are Subject to Domestic and Foreign Regulatory Requirements, and May Encounter Difficulties in Integrating and Separating These Businesses and Therefore We May Not Realize the Anticipated Benefits

We regularly seek growth through strategic acquisitions as well as evaluate our portfolio for potential divestitures. These activities require favorable environments to execute these transactions, and we may encounter difficulties in obtaining the necessary regulatory approvals in both domestic and foreign jurisdictions. In 2018 and in past years, we have made various acquisitions, including the valves & controls business in 2017, and entered into joint venture arrangements intended to complement or expand our business, and may continue to do so in the future. The success of these transactions will depend on our ability to integrate assets and personnel acquired in these transactions and to cooperate with our strategic partners. We may encounter difficulties in integrating acquisitions with our operations as well as separating divested businesses, and in managing strategic investments. Furthermore, we may not realize the degree, or timing, of benefits we anticipate when we first enter into a transaction. Any of the foregoing could adversely affect our business and results of operations.

We Use a Variety of Raw Materials and Components in Our Businesses, and Significant Shortages or Price Increases Could Increase Our Operating Costs and Adversely Impact the Competitive Positions of Our Products

Our major requirements for raw materials include steel, copper, cast iron, electronics, rare earth metals, aluminum, brass and, to a lesser extent, plastics and petroleum-based chemicals. The Company seeks multiple sources of supply for each of its major requirements in order to avoid significant dependence on any one or a few suppliers. However, the supply of materials or other items could be disrupted by natural disasters or other events. Significant shortages or price increases could impact the prices our affected businesses charge, their operating costs and the competitive position of their products and services, which could adversely affect our results of operations. While we monitor market prices of the commodities we require and attempt to mitigate price exposure through hedging activities, this risk could adversely affect our operating results.

Our Operations Depend on Production Facilities Throughout the World, a Majority of Which Are Located Outside the United States and Subject to Increased Risks of Disrupted Production Causing Delays in Shipments and Loss of Customers and Revenue

We manage businesses with manufacturing facilities worldwide, a majority of which are located outside the United States, and also source certain materials internationally. Emerging market sales represent over one-third of total sales and serving a global customer base requires that we place more materials sourcing and production in emerging markets to capitalize on market opportunities and maintain our best-cost position. Our and our suppliers' international production facilities and operations could be disrupted by a natural disaster, labor strife, war, political unrest, terrorist activity or public health concerns, particularly in emerging countries that are not well-equipped to handle such occurrences.

Our manufacturing facilities abroad are dependent on the stability of governments and business conditions and may be more susceptible to changes in laws, policies and regulations in host countries, as well as economic and political upheaval, than our domestic facilities. These facilities face increased risks of nationalization as well as operational disruptions which could cause delays in shipments of products and the loss of sales and customers, and insurance proceeds may not adequately compensate us.

Our Substantial Sales Both in the U.S. and Abroad Subject Us to Economic Risk as Our Results of Operations May Be Adversely Affected by Changes in Government Regulations and Policies and Currency Fluctuations

We sell, manufacture, engineer and purchase products globally, with significant sales in both mature and emerging markets. We expect sales in non-U.S. markets to continue to represent a significant portion of our total sales. Our U.S. and international operations subject the Company to changes in government regulations and policies in a large number of jurisdictions around the world, including those related to trade, investments, taxation, exchange controls and repatriation of earnings. Changes in laws or policies governing the terms of foreign trade, trade restrictions or barriers, tariffs or taxes, including on imports from countries where we manufacture products, could adversely impact our business and financial results. In addition, changes in the relative values of currencies occur from time to time and have affected our operating results and could do so in the future. While we monitor our exchange rate exposures and attempt to mitigate this exposure through hedging activities, this risk could adversely affect our operating results.

Recessions, Adverse Market Conditions or Downturns in End Markets We Serve May Negatively Affect Our Operations

In the past, our operations have been exposed to significant volatility due to changes in general economic conditions, recessions or adverse conditions in the end markets we serve. In the future, similar changes could adversely impact overall sales, operating results and cash flows. Moreover, during economic downturns we may undertake more extensive restructuring actions and incur higher costs. If our restructuring actions are not sufficiently effective, we may not be able to achieve our anticipated operating results. In addition, these factors could lead to impairment charges for goodwill or other long-lived assets.

Changes in Tax Rates, Laws or Regulations and the Resolution of Tax Disputes Could Adversely Impact Our Financial Results

As a global company, we are subject to taxation in the U.S. and numerous non-U.S. jurisdictions. Significant judgment is required to determine our consolidated income tax provision and related liabilities. The Company’s effective tax rate, cash flows and operating results could be affected by changes in the mix of earnings in countries with different statutory tax rates, as well as by changes in the local tax laws and regulations, or the interpretations thereof. For example, on December 22, 2017, the U.S. government enacted tax reform, the Tax Cuts and Jobs Act (the “Act”), which made comprehensive changes to U.S. federal income tax laws by moving from a global to a modified territorial tax regime. The changes made by the Act are broad and complex. As such, the final one-time deemed repatriation tax may differ materially from the Company’s provisional amounts due to additional regulatory guidance expected to be issued, changes in interpretations, or any legislative actions to address questions arising from the Act, as well as further evaluation of the Company's actions, assumptions and interpretations. In addition, the Company’s tax returns are subject to regular review and audit by U.S. and non-U.S. tax authorities. While we believe our tax provisions are appropriate, the final outcome of tax audits or disputes could result in adjustments to the Company’s tax liabilities, which could adversely affect our financial results.

Access to Funding Through the Capital Markets is Essential to the Execution of Our Business Plan and if We Are Unable to Maintain Such Access We Could Experience a Material Adverse Effect on Our Business and Financial Results

Our ability to invest in our businesses, make strategic acquisitions and refinance maturing debt obligations requires access to the capital markets and sufficient bank credit lines to support short-term borrowings. Volatility in the capital markets may increase costs associated with issuing commercial paper or other debt instruments, or affect the Company’s ability to access those markets. If we are unable to continue to access the capital markets, we could experience a material adverse effect on our business and financial results. Additionally, if our customers, suppliers or financial institutions are unable to access the capital markets to meet their commitments to the Company, our business could be adversely impacted.

Our Business Success Depends on the Ability to Attract, Develop and Retain Key Personnel

Our success depends in part on the efforts and abilities of our management and key employees. Their skills, experience and industry knowledge significantly benefit our operations and performance. The failure to attract, develop and retain highly qualified personnel could adversely affect our business and operating results.

Security Breaches or Disruptions of Our Information Technology Systems Could Adversely Affect Our Business

The Company relies on information technology networks and systems, including the internet, to process, transmit and store electronic information, and to manage or support a variety of business processes and activities. Additionally, the Company collects and stores certain data, including proprietary business information, and may have access to confidential or personal information in certain of our businesses that is subject to privacy and security laws and regulations, which are potentially conflicting, and customer-imposed controls. These technology networks and systems may be susceptible to damage, disruptions or shutdowns due to failures during the process of upgrading or replacing software, databases or components; power outages; telecommunications or system failures; terrorist attacks; natural disasters; employee error or malfeasance; server or cloud provider breaches; and computer viruses or cyberattacks. Cybersecurity threats and incidents can range from uncoordinated individual attempts to gain unauthorized access to information technology networks and systems to more sophisticated and targeted measures, known as advanced persistent threats, directed at the Company, its products, its customers and/or its third-party service providers. Despite the implementation of cybersecurity measures (including access controls, data encryption, vulnerability assessments, continuous monitoring, and maintenance of backup and protective systems), the Company’s information technology systems may still be vulnerable to cybersecurity threats and other electronic security breaches. It is possible for such vulnerabilities to remain undetected for an extended period, up to and including several years. In addition, it is possible a security breach could result in theft of trade secrets or other intellectual property or disclosure of confidential customer, supplier or employee information. There may be other challenges and risks as the Company upgrades its enterprise resource planning software and related systems across a majority of its businesses. Should the Company be unable to prevent security breaches or other damage to our information technology systems, disruptions could have an adverse effect on our operations, as well as expose the Company to litigation, liability or penalties under privacy laws, increased cybersecurity protection costs, reputational damage and product failure.

Our Products and Services are Highly Sophisticated and Specialized, and a Major Product Failure or Similar Event Caused by Defects, Cybersecurity Incidents or Other Failures, Could Adversely Affect Our Business, Reputation, Financial Position and Results of Operations

We produce highly sophisticated products and provide specialized services that incorporate or use complex or leading-edge technology, including both hardware and software. Many of our products and services, including measurement and analytical instrumentation, industrial valves and equipment, and process control systems, are integrated and used in complex process, hybrid and discrete manufacturing environments. As a result, the impact of a catastrophic product failure or similar event could be significant. While we have built operational processes to ensure that our product design, manufacture, performance and servicing meet rigorous quality standards, there can be no assurance that we or our customers or other third parties will not experience operational process or product failures and other problems, including through manufacturing or design defects, process or other failures of contractors or third-party suppliers, cybersecurity incidents or other intentional acts, that could result in potential product, safety, regulatory or environmental risks. Cybersecurity incidents aimed at the software embedded in our products could lead to third-party claims resulting from damages caused by our product failures, and this risk is enhanced by the increasingly connected nature of our products. The potential consequences of a material cybersecurity incident include financial loss, reputational damage, litigation with third parties, diminution in the value of our investment in research, development and engineering, and increased cybersecurity protection and remediation costs due to the increasing sophistication and proliferation of threats, which in turn could adversely affect our competitiveness and results of operations.

We Are Subject to Litigation and Environmental Regulations That Could Adversely Impact Our Operating Results

We are, and may in the future be, a party to a number of legal proceedings and claims, including those involving intellectual property, product liability (including asbestos) and environmental matters, several of which claim, or may in the future claim, significant damages. Given the inherent uncertainty of litigation, we can offer no assurance that existing litigation or a future adverse development will not have a material adverse impact. We also are subject to various laws and regulations relating to environmental protection and the discharge of materials into the environment, and we could incur substantial costs as a result of the noncompliance with or liability for cleanup or other costs or damages under environmental laws.

ITEM 1B - UNRESOLVED STAFF COMMENTS

None.

ITEM 2 - PROPERTIES

At September 30, 2018, the Company had approximately 215 manufacturing locations worldwide, of which approximately 75 were located in the United States and 140 were located outside the United States, primarily in Europe and Asia, and to a lesser extent in Canada and Latin America. Manufacturing locations by business are: Automation Solutions, 150, and Commercial & Residential Solutions, 65, including 45 in the Climate Technologies segment and 20 in the Tools & Home Products segment. The majority of the locations are owned, with the remainder occupied under lease. The Company considers its facilities suitable and adequate for the purposes for which they are used.

ITEM 3 - LEGAL PROCEEDINGS

The Company and its subsidiaries are party to various legal proceedings, some of which claim substantial amounts of damages. It is not possible to predict the outcome of these matters, but historically the Company has been largely successful in both prosecuting and defending claims and lawsuits.

The Company believes a material adverse impact of any pending litigation is unlikely. Nevertheless, given the uncertainties of litigation, a remote possibility exists that litigation could have a material adverse impact on the Company.

Information regarding legal proceedings is set forth in Note 13.

ITEM 4 - MINE SAFETY DISCLOSURES

Not applicable.

EXECUTIVE OFFICERS OF THE REGISTRANT

The following sets forth certain information as of November 19, 2018 with respect to the Company's executive officers. The Fiscal Year column indicates the first year the executive served as an officer of the Company. These officers have been elected or appointed to terms which expire February 5, 2019:

Name	Position	Age	Fiscal Year
D. N. Farr	Chairman of the Board and Chief Executive Officer*	63	1985
F. J. Dellaquila	Senior Executive Vice President and Chief Financial Officer	61	1991
S. J. Pelch	Chief Operating Officer and Executive Vice President - Organization Planning and Development	54	2005
M. H. Train	President and Chairman Automation Solutions	56	1994
L. Karsanbhai	Executive President - Automation Solutions	49	2002
R. T. Sharp	Executive President - Commercial & Residential Solutions	51	1999
S. Y. Bosco	Senior Vice President, Secretary and General Counsel	60	2005
M. J. Bulanda	Senior Vice President - Planning and Development	52	2002
K. Button Bell	Senior Vice President and Chief Marketing Officer	60	1999
M. J. Baughman	Vice President, Controller and Chief Accounting Officer	53	2018

*Also chairman of the Executive Committee of the Board of Directors.

There are no family relationships among any of the executive officers and directors.

David N. Farr has been Chief Executive Officer since October 2000, was appointed Chairman of the Board in September 2004, and also served as President from November 2005 to October 2010.

Frank J. Dellaquila was appointed Senior Executive Vice President in November 2016, Executive Vice President in November 2012 and Senior Vice President and Chief Financial Officer in February 2010.

Steven J. Pelch was appointed Chief Operating Officer in January 2018, Executive Vice President in November 2016, Senior Vice President in November 2015 and Vice President - Organization Planning and Development in November 2014. Prior to that, Mr. Pelch was Vice President - Organization Planning from October 2012 to November 2014 and Vice President - Planning from October 2005 to October 2012.

Michael H. Train was appointed President in October 2018. Prior to that, Mr. Train was Executive President - Automation Solutions from October 2016 through October 2018, Executive Vice President - Automation Solutions from May 2016 through October 2016 and President of Global Sales for Emerson Process Management from 2010 through May 2016.

Lal Karsanbhai was appointed Executive President - Automation Solutions in October 2018. Prior to his current position, Mr. Karsanbhai was Group President - Measurement & Analytical from 2016 through September 2018, President Emerson Network Power Europe, Middle East and Africa from 2014 through 2016, Vice President Corporate Planning from 2012 through 2014, President of Emerson's Fisher Regulator Technologies business from 2008 through 2012, and Vice President and General Manager of its Natural Gas Unit from 2005 through 2008.

Robert T. Sharp was appointed Executive President - Commercial & Residential Solutions in October 2016. Prior to his current position, Mr. Sharp was Executive Vice President - Commercial & Residential Solutions from February

2016 through October 2016, Executive Vice President - Climate Technologies from February 2015 through February 2016, Vice President - Profit Planning from 2013 through January 2015 and President - Emerson Process Management Europe from 2009 through 2013.

Sara Y. Bosco was appointed to the position of Senior Vice President, Secretary and General Counsel in May 2016. Prior to her current position, Ms. Bosco was President, Emerson Asia-Pacific from 2008 through May 2016.

Mark J. Bulanda was appointed Senior Vice President in November 2016 and Vice President - Acquisition Planning and Development in May 2016. Prior to his current position, Mr. Bulanda was Executive Vice President - Emerson Industrial Automation from 2012 through May 2016 and President of Control Techniques from 2010 through 2012.

Katherine Button Bell was appointed Senior Vice President in November 2016 and Vice President and Chief Marketing Officer in 1999.

Michael J. Baughman was appointed Chief Accounting Officer in February 2018, and Vice President and Controller in October 2017. Prior to that Mr. Baughman was Vice President, Finance, Global Operations, Quality, and Research and Development of Baxter International Inc., a global healthcare products company, from 2015 through September 2017, Vice President, Finance, Medical Products of Baxter from 2013 to 2015 and Corporate Controller of Baxter from 2005 to 2013.

PART II

ITEM 5 - MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Information regarding the market for the Company's common stock and dividend payments is set forth in Note 20. There were approximately 18,343 stockholders of record at September 30, 2018.

In November 2015, the Board of Directors authorized the purchase of up to 70 million shares, and 41.8 million shares remain available. No shares were purchased in the fourth quarter of 2018.

ITEM 6 - SELECTED FINANCIAL DATA

Years ended September 30
(dollars in millions, except per share amounts)

	2014	2015 (a)	2016	2017	2018 (b)
Net sales	$17,733	16,249	14,522	15,264	17,408
Earnings from continuing operations – common stockholders	$2,201	2,517	1,590	1,643	2,203
Basic earnings per common share from continuing operations	$3.13	3.72	2.46	2.54	3.48
Diluted earnings per common share from continuing operations	$3.11	3.71	2.45	2.54	3.46
Cash dividends per common share	$1.72	1.88	1.90	1.92	1.94
Long-term debt	$3,559	4,289	4,051	3,794	3,137
Total assets	$24,177	22,088	21,732	19,589	20,390

(a) Includes gains from divestitures of businesses of $611 million and $0.90 per share.

(b) Includes income tax benefit of $189 million ($0.30 per share) from the impacts of U.S. tax reform.

See Notes 3 and 4 for information regarding the Company's acquisition and divestiture activities for the last three years, and Note 14 for information regarding the impacts of U.S. tax reform.

ITEM 7 - MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Safe Harbor Statement

This Annual Report on Form 10-K contains various forward-looking statements and includes assumptions concerning Emerson's operations, future results and prospects. These forward-looking statements are based on current expectations and are subject to risks and uncertainties. Emerson undertakes no obligation to update any such statements to reflect later developments. In connection with the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995, Emerson provides the cautionary statements set forth under Item 1A - “Risk Factors,” which are hereby incorporated by reference and identify important economic, political and technological factors, among others, changes in which could cause the actual results or events to differ materially from those set forth in or implied by the forward-looking statements and related assumptions.

Non-GAAP Financial Measures

To supplement the Company’s financial information presented in accordance with U.S. generally accepted accounting principles (U.S. GAAP), management periodically uses certain “non-GAAP financial measures,” as such term is defined in Regulation G under SEC rules, to clarify and enhance understanding of past performance and prospects for the future. Generally, a non-GAAP financial measure is a numerical measure of a company’s operating performance, financial position or cash flows that excludes or includes amounts that are included in or excluded from the most directly comparable measure calculated and presented in accordance with U.S. GAAP. For example, non-GAAP measures may exclude the impact of certain items such as our strategic repositioning actions, other acquisitions or divestitures, U.S. tax reform, changes in reporting segments, gains, losses and impairments, or items outside of management’s control, such as foreign currency exchange rate fluctuations. Management believes that the following non-GAAP financial measures provide investors and analysts useful insight into the Company’s financial position and operating performance. Any non-GAAP measure provided should be viewed in addition to, and not as an alternative to, the most directly comparable measure determined in accordance with U.S. GAAP, as identified in italics below. Further, the calculation of these non-GAAP financial measures may differ from the calculation of similarly titled financial measures presented by other companies and therefore may not be comparable among companies.

Underlying sales, which exclude the impact of acquisitions, divestitures and fluctuations in foreign currency exchange rates during the periods presented, are provided to facilitate relevant period-to-period comparisons of sales growth by excluding those items that impact overall comparability (U.S. GAAP measure: net sales).

Operating profit (defined as net sales less cost of sales and selling, general and administrative expenses) and operating profit margin (defined as operating profit divided by net sales) are indicative of short-term operational performance and ongoing profitability. Management closely monitors operating profit and operating profit margin of each business to evaluate past performance and actions required to improve profitability. EBIT (defined as earnings before deductions for interest expense, net and income taxes) and total segment EBIT, and EBIT margin (defined as EBIT divided by net sales) and total segment EBIT margin, are commonly used financial measures that exclude the impact of financing on the capital structure and income taxes. All these measures are utilized by management to evaluate performance (U.S. GAAP measures: pretax earnings or pretax profit margin).

Earnings, earnings per share, return on common stockholders’ equity and return on total capital excluding certain gains and losses, impairments, costs, impacts of the strategic portfolio repositioning actions and other acquisitions or divestitures, impacts of U.S. tax reform, or other items provide additional insight into the underlying, ongoing operating performance of the Company and facilitate period-to-period comparisons by excluding the earnings impact of these items. Management believes that presenting earnings, earnings per share, return on common stockholders' equity and return on total capital excluding these items is more representative of the Company’s operational performance and may be more useful for investors (U.S. GAAP measures: earnings, earnings per share, return on common stockholders’ equity, return on total capital).

Free cash flow (operating cash flow less capital expenditures) and free cash flow as a percent of net sales are indicators of the Company’s cash generating capabilities, and dividends as a percent of free cash flow is an indicator of the Company's ability to support its dividend, after considering investments in capital assets which are necessary to maintain and enhance existing operations. The determination of operating cash flow adds back noncash depreciation expense to earnings and thereby does not reflect a charge for necessary capital expenditures. Management believes that free cash flow, free cash flow as a percent of net sales and dividends as a percent of free cash flow are useful to both management and investors as measures of the Company's ability to generate cash and support its dividend (U.S. GAAP measure: operating cash flow, operating cash flow as a percent of net sales, dividends as a percent of operating cash flow).

FINANCIAL REVIEW

Report of Management

The Company's management is responsible for the integrity and accuracy of the financial statements. Management believes that the financial statements for the three years ended September 30, 2018 have been prepared in conformity with U.S. generally accepted accounting principles appropriate in the circumstances. In preparing the financial statements, management makes informed judgments and estimates where necessary to reflect the expected effects of events and transactions that have not been completed. The Company's disclosure controls and procedures ensure that material information required to be disclosed is recorded, processed, summarized and communicated to management and reported within the required time periods.

In meeting its responsibility for the reliability of the financial statements, management relies on a system of internal accounting control. This system is designed to provide reasonable assurance that assets are safeguarded and transactions are executed in accordance with management's authorization and recorded properly to permit the preparation of financial statements in accordance with U.S. generally accepted accounting principles. The design of this system recognizes that errors or irregularities may occur and that estimates and judgments are required to assess the relative cost and expected benefits of the controls. Management believes that the Company's internal accounting controls provide reasonable assurance that errors or irregularities that could be material to the financial statements are prevented or would be detected within a timely period.

The Audit Committee of the Board of Directors, which is composed solely of independent directors, is responsible for overseeing the Company's financial reporting process. The Audit Committee meets with management and the Company's internal auditors periodically to review the work of each and to monitor the discharge by each of its responsibilities. The Audit Committee also meets periodically with the independent auditors, who have free access to the Audit Committee and the Board of Directors, to discuss the quality and acceptability of the Company's financial reporting and internal controls, as well as nonaudit-related services.

The independent auditors are engaged to express an opinion on the Company's consolidated financial statements and on the Company's internal control over financial reporting. Their opinions are based on procedures that they believe to be sufficient to provide reasonable assurance that the financial statements contain no material errors and that the Company's internal controls are effective.

Management's Report on Internal Control Over Financial Reporting

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. With the participation of the Chief Executive Officer and the Chief Financial Officer, management conducted an evaluation of the effectiveness of internal control over financial reporting based on the framework and the criteria established in Internal Control - Integrated Framework (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management has concluded that internal control over financial reporting was effective as of September 30, 2018.

The tools and test equipment business and Aventics were acquired in the fourth quarter of fiscal 2018. Management has excluded these businesses from its assessment of internal control over financial reporting as of September 30, 2018. Total assets and revenues of these businesses excluded from the assessment represented approximately 9 percent and 1 percent, respectively, of the Company's related consolidated financial statement amounts as of and for the year ended September 30, 2018.

The Company's auditor, KPMG LLP, an independent registered public accounting firm, has issued an audit report on the effectiveness of the Company's internal control over financial reporting.

/s/ David N. Farr	/s/ Frank J. Dellaquila
David N. Farr	Frank J. Dellaquila
Chairman of the Board	Senior Executive Vice President
and Chief Executive Officer	and Chief Financial Officer

Results of Operations
Years ended September 30
(Dollars in millions, except per share amounts)

	2016	2017	2018	17 vs. 16	18 vs. 17
Net sales	$14,522	15,264	17,408	5 %	14%
Gross profit	$6,262	6,404	7,460	2 %	16%
Percent of sales	43.1 %	42.0 %	42.9 %		
SG&A	$3,464	3,618	4,258		
Percent of sales	23.8 %	23.7 %	24.5 %		
Other deductions, net	$294	286	376		
Interest expense, net	$188	165	159		
Earnings from continuing operations before income taxes	$2,316	2,335	2,667	1 %	14%
Percent of sales	16.0 %	15.3 %	15.3 %		
Earnings from continuing operations common stockholders	$1,590	1,643	2,203	3 %	34%
Net earnings common stockholders	$1,635	1,518	2,203	(7)%	45%
Percent of sales	11.3 %	9.9 %	12.7 %		
Diluted EPS – Earnings from continuing operations	$2.45	2.54	3.46	4 %	36%
Diluted EPS – Net earnings	$2.52	2.35	3.46	(7)%	47%
Return on common stockholders' equity	20.9 %	18.6 %	24.9 %		
Return on total capital	15.5 %	15.3 %	20.6 %		

OVERVIEW

Sales from continuing operations for 2018 were $17.4 billion, an increase of $2.1 billion, or 14 percent. The Company funded $2.2 billion in acquisitions, which added 7 percent, while the divestiture of the residential storage business subtracted 2 percent and foreign currency translation added 1 percent. Underlying sales were up 8 percent compared with the prior year.

Sales increased in both businesses. Automation Solutions sales were up 21 percent, reflecting broad-based demand across energy-related and general industrial markets, and the impact of acquisitions. Commercial & Residential Solutions sales increased 2 percent as favorable demand in global HVAC and refrigeration markets and the impact of acquisitions were partially offset by the divestiture of the residential storage business.

Earnings from continuing operations common stockholders were $2.2 billion in 2018, up 34 percent compared with prior year earnings of $1.6 billion. Diluted earnings per share from continuing operations were $3.46, up 36 percent versus $2.54 per share in 2017, due to strong sales growth and operational performance, as well as an income tax benefit of $189 million ($0.30 per share) from the impacts of U.S. tax reform and an $0.18 per share benefit from the lower tax rate on 2018 earnings.

Net earnings common stockholders were $2.2 billion in 2018, up 45 percent compared with prior year earnings of $1.5 billion, which included the impact of discontinued operations. Diluted earnings per share were $3.46, up 47 percent versus $2.35 per share in 2017.

The Company generated operating cash flow from continuing operations of $2.9 billion in 2018, an increase of $202 million, or 8 percent.

NET SALES

Net sales for 2018 were $17.4 billion, an increase of $2.1 billion, or 14 percent compared with 2017. Sales increased $2.0 billion in Automation Solutions and $125 million in Commercial & Residential Solutions. Underlying sales, which exclude foreign currency translation, acquisitions and divestitures, increased 8 percent ($1.1 billion) on higher volume. Acquisitions, net of the divestiture of the residential storage business, added 5 percent ($819 million) and foreign currency translation added 1 percent ($181 million). Underlying sales increased 9 percent in the U.S. and 7 percent internationally.

Net sales for 2017 were $15.3 billion, an increase of $742 million, or 5 percent compared with 2016. Sales increased $441 million in Automation Solutions and $302 million in Commercial & Residential Solutions. Underlying sales increased 1 percent ($168 million) on higher volume and slightly lower price. Acquisitions added 4 percent ($628 million) while foreign currency translation subtracted $54 million. Underlying sales increased 2 percent in the U.S. and were flat internationally.

INTERNATIONAL SALES

Emerson is a global business with international sales representing 54 percent of total sales, including U.S. exports. The Company generally expects faster economic growth in emerging markets in Asia, Latin America, Eastern Europe and Middle East/Africa.

International destination sales, including U.S. exports, increased 18 percent, to $9.5 billion in 2018, reflecting increases in both the Automation Solutions and Commercial & Residential Solutions businesses. U.S. exports of $1.1 billion were up 19 percent compared with 2017, reflecting increases in both Automation Solutions and Commercial & Residential Solutions which benefited from acquisitions. Underlying international destination sales were up 7 percent, as foreign currency translation had a 2 percent favorable impact, while acquisitions, net of the divestiture of the residential storage business, had a 9 percent favorable impact on the comparison. Underlying sales increased 2 percent in Europe and 10 percent in Asia (China up 17 percent). Underlying sales increased 4 percent in Latin America, 12 percent in Canada and 6 percent in Middle East/Africa. Origin sales by international subsidiaries, including shipments to the U.S., totaled $8.5 billion in 2018, up 19 percent compared with 2017, primarily reflecting acquisitions.

International destination sales, including U.S. exports, increased 5 percent, to $8.0 billion in 2017, reflecting increases in both the Automation Solutions and Commercial & Residential Solutions businesses. U.S. exports of $927 million were up 4 percent compared with 2016, reflecting increases in both Automation Solutions, which benefited from the valves & controls acquisition, and Commercial & Residential Solutions. Underlying international destination sales were flat, as foreign currency translation had a 1 percent unfavorable impact, while acquisitions had a 6 percent favorable impact on the comparison. Underlying sales were down 1 percent in Europe and up 6 percent in Asia (China up 15 percent). Underlying sales decreased 12 percent in Latin America, 3 percent in Canada and 6 percent in Middle East/Africa. Origin sales by international subsidiaries, including shipments to the U.S., totaled $7.2 billion in 2017, up 6 percent compared with 2016, primarily reflecting the valves & controls acquisition.

ACQUISITIONS AND DIVESTITURES

On July 17, 2018, the Company completed the acquisition of Aventics, a global provider of smart pneumatics technologies that power machine and factory automation applications, for $622 million, net of cash acquired. This business, which has annual sales of approximately $425 million, is included in the Industrial Solutions product offering within the Automation Solutions segment.

On July 2, 2018, the Company completed the acquisition of Textron's tools and test equipment business for $810 million, net of cash acquired. This business, with annual sales of approximately $470 million, is a manufacturer of electrical and utility tools, diagnostics, and test and measurement instruments, and is reported in the Tools & Home products segment.

On December 1, 2017, the Company acquired Paradigm, a provider of software solutions for the oil and gas industry, for $505 million, net of cash acquired. This business had annual sales of approximately $140 million and is included in the Measurement & Analytical Instrumentation product offering within Automation Solutions.

In fiscal 2018, the Company also acquired four smaller businesses, two in the Automation Solutions segment and two in the Climate Technologies segment.

On October 2, 2017, the Company sold its residential storage business for $200 million in cash, and recognized a small pretax gain and an after-tax loss of $24 million ($0.04 per share) in the first quarter of 2018 due to income taxes resulting from nondeductible goodwill. The Company realized approximately $150 million in after-tax cash proceeds from the sale. Assets and liabilities for this business were classified as held-for-sale in the consolidated balance sheet at September 30, 2017. This business had sales of $298 million and pretax earnings of $15 million in 2017, and was previously reported within the Tools & Home Products segment.

On April 28, 2017, the Company completed the acquisition of Pentair's valves & controls business for $2.96 billion, net of cash acquired of $207 million, subject to certain post-closing adjustments. This business, with annualized sales of approximately $1.4 billion, is a manufacturer of control, isolation and pressure relief valves and actuators, and complements the Valves, Actuators & Regulators product offering within Automation Solutions. The Company also acquired two smaller businesses in the Automation Solutions segment. Total cash paid for all businesses in 2017 was $3.0 billion, net of cash acquired.

The Company acquired six businesses in 2016, four in Automation Solutions and two in Climate Technologies. Total cash paid for these businesses was $132 million, net of cash acquired. Annualized sales for these businesses were approximately $51 million in 2016.

See Note 3 for further information on acquisitions and divestitures, including pro forma financial information. See information under “Discontinued Operations” for a discussion of the Company’s divestitures related to its portfolio repositioning actions.

COST OF SALES

Cost of sales for 2018 were $9.9 billion, an increase of $1.1 billion compared with $8.9 billion in 2017. The increase is primarily due to acquisitions, higher volume and the impact of foreign currency translation. Gross profit was $7.5 billion in 2018 compared to $6.4 billion in 2017. Gross margin increased 0.9 percentage points to 42.9 percent, reflecting leverage on higher volume and savings from cost reduction actions, partially offset by the impact of acquisitions. Gross profit margin was 42.0 percent in 2017.

Cost of sales for 2017 were $8.9 billion, an increase of $600 million compared with $8.3 billion in 2016. The increase reflects the acquisition of the valves & controls business and higher volume, partially offset by cost reduction actions and the impact of foreign currency translation. Gross profit was $6.4 billion in 2017 compared with $6.3 billion in 2016. Gross margin of 42.0 percent reflected dilution of 1.2 percentage points due to the valves & controls operations and first year acquisition accounting charges of $74 million related to inventory. Slightly lower price also contributed to the decline, while savings from cost reduction actions partially offset these decreases. Gross margin was 43.1 percent in 2016.

SELLING, GENERAL AND ADMINISTRATIVE EXPENSES

Selling, general and administrative (SG&A) expenses of $4.3 billion in 2018 increased $640 million compared with 2017 due to acquisitions and an increase in volume. SG&A as a percent of sales of 24.5 percent increased 0.8 percentage points due to higher incentive stock compensation of $106 million, reflecting an increase in the Company's stock price and progress toward achieving its performance objectives, the impact of acquisitions, and higher investment spending in Automation Solutions, partially offset by leverage on higher volume.

SG&A expenses of $3.6 billion in 2017 increased $154 million compared with 2016, primarily due to the valves & controls acquisition. Savings from cost reduction actions and lower incentive stock compensation of $35 million, reflecting the impact of changes in the stock price, were partially offset by higher other costs. SG&A as a percent of sales of 23.7 percent decreased 0.1 percentage points in 2017 compared with 2016.

OTHER DEDUCTIONS, NET

Other deductions, net were $376 million in 2018, an increase of $90 million compared with 2017. The increase primarily reflects higher intangibles amortization of $75 million due to acquisitions and higher acquisition/divestiture costs of $18 million, partially offset by lower restructuring expense of $13 million. See Note 5.

Other deductions, net were $286 million in 2017, a decrease of $8 million compared with 2016. The decrease primarily reflects favorable foreign currency transactions comparisons of $78 million (unfavorable in the prior year) and lower restructuring expense of $18 million. These decreases were substantially offset by intangibles and backlog amortization related to the valves & controls acquisition of $29 million and $19 million, respectively, and higher acquisition/divestiture costs of $24 million. Additionally, 2016 results included a $21 million gain from payments received related to dumping duties.

INTEREST EXPENSE, NET
Interest expense, net was $159 million, $165 million and $188 million in 2018, 2017 and 2016, respectively. The decreases in 2018 and 2017 reflect the maturity of long-term debt with relatively higher interest rates and higher interest income.

INCOME TAXES
On December 22, 2017, the U.S. government enacted tax reform, the Tax Cuts and Jobs Act (the “Act”), which made comprehensive changes to U.S. federal income tax laws by moving from a global to a modified territorial tax regime. The Act includes a reduction of the U.S. corporate income tax rate from 35 percent to 21 percent in calendar year 2018 along with the elimination of certain deductions and credits, and a one-time “deemed repatriation” of accumulated foreign earnings. During 2018, the Company recognized a net tax benefit of $189 million ($0.30 per share) due to impacts of the Act, consisting of a $94 million benefit on revaluation of net deferred income tax liabilities to the lower tax rate, $35 million of expense for the tax on deemed repatriation of accumulated foreign earnings and withholding taxes, and the reversal of $130 million accrued in previous periods for the planned repatriation of non-U.S. cash.

On August 1, 2018, the U.S. Treasury and Internal Revenue Service released proposed regulations relating to the one-time tax on deemed repatriation of accumulated foreign earnings. The proposed regulations were subject to a 60-day comment period and final regulations are expected to be issued after consideration of comments received. The Company is currently evaluating the impact of the proposed regulations and anticipates finalizing its provisional estimates after fully evaluating the final regulations.

The changes made by the Act are broad and complex. As such, the final one-time deemed repatriation tax may differ materially from these provisional amounts due to additional regulatory guidance expected to be issued, changes in interpretations, or any legislative actions to address questions arising from the Act, as well as further evaluation of the Company’s actions, assumptions and interpretations.

Income taxes were $443 million, $660 million and $697 million for 2018, 2017 and 2016, respectively, resulting in effective tax rates of 17 percent, 28 percent and 30 percent in 2018, 2017 and 2016, respectively. The 11 percentage point decrease in 2018 versus the prior year is due to the impacts of the Act, which include the net tax benefit described above and the lower tax rate on 2018 earnings. The 2018 and 2017 rates also include benefits from restructuring of subsidiaries of $53 million ($0.08 per share) and $47 million ($0.07 per share), respectively.

EARNINGS FROM CONTINUING OPERATIONS
Earnings from continuing operations attributable to common stockholders in 2018 were $2.2 billion, up 34 percent compared with 2017, and diluted earnings per share were $3.46 in 2018, up 36 percent. Earnings per share included the net tax benefit due to impacts of the Act of $0.30 per share discussed above. Results also included an $0.18 per share benefit from the lower tax rate on 2018 earnings, partially offset by a $0.04 per share loss on the residential storage business. Earnings increased $364 million in the Automation Solutions segment in 2018 and decreased $6 million in Commercial & Residential Solutions. See the Business discussion that follows and Note 18.

Earnings from continuing operations attributable to common stockholders in 2017 were $1.6 billion, up 3 percent compared with 2016, and diluted earnings per share were $2.54, up 4 percent. Valves & controls reduced both comparisons by 6 percentage points, or $97 million, $0.15 per share, including restructuring expense, intangibles amortization, and first year pretax acquisition accounting charges related to inventory and backlog of $93 million ($65 million after-tax, $0.10 per share) which are reported in Corporate and other. Earnings increased $66 million in the Automation Solutions segment in 2017 and $72 million in Commercial & Residential Solutions.

DISCONTINUED OPERATIONS

On November 30, 2016, the Company completed the sale of its network power systems business for $4.0 billion in cash and retained a subordinated interest in distributions, contingent upon the equity holders first receiving a threshold return on their initial investment. Additionally, on January 31, 2017, the Company completed the sale of its power generation, motors and drives business for approximately $1.2 billion. Discontinued operations was a net loss of $125 million, $0.19 per share, in 2017 and income of $45 million, $0.07 per share, in 2016. Operating cash flow used by discontinued operations was $778 million for 2017 and capital expenditures were $20 million. In 2016, operating cash flow from discontinued operations was $382 million and capital expenditures were $76 million. The results of operations for these businesses were reported in discontinued operations until disposal. See Note 4.

NET EARNINGS AND EARNINGS PER SHARE; RETURNS ON EQUITY AND TOTAL CAPITAL
Net earnings attributable to common stockholders in 2018 were $2.2 billion, up 45 percent compared with 2017, and diluted earnings per share were $3.46, up 47 percent. The 2017 results included a net loss from discontinued operations of $125 million which benefited net earnings and earnings per share comparisons 11 percentage points.

Net earnings attributable to common stockholders in 2017 were $1.5 billion, down 7 percent compared with 2016, and diluted earnings per share were $2.35, down 7 percent. These results include the impact of discontinued operations discussed above which negatively impacted net earnings and earnings per share comparisons 10 and 11 percentage points, respectively.

Return on common stockholders' equity (net earnings attributable to common stockholders divided by average common stockholders' equity) was 24.9 percent in 2018 compared with 18.6 percent in 2017 and 20.9 percent in 2016. Return on total capital was 20.6 percent in 2018 compared with 15.3 percent in 2017 and 15.5 percent in 2016 (computed as net earnings attributable to common stockholders excluding after-tax net interest expense, divided by average common stockholders' equity plus short- and long-term debt less cash and short-term investments). The impacts of U.S. tax reform discussed above benefited the 2018 return on common stockholders' equity and return on total capital, while the acquisition of the valves & controls business reduced the 2017 returns. Discontinued operations reduced returns in both 2017 and 2016.

Business Segments
Following is an analysis of segment results for 2018 compared with 2017, and 2017 compared with 2016. The Company defines segment earnings as earnings before interest and income taxes. In connection with the strategic portfolio repositioning actions completed in fiscal 2017, the Company began reporting three segments: Automation Solutions, and Climate Technologies and Tools & Home Products which together comprise the Commercial & Residential Solutions business. See Note 18.
AUTOMATION SOLUTIONS

(dollars in millions)	2016	2017	2018	17 vs. 16	18 vs. 17
Sales	$8,977	9,418	11,441	5%	21%
Earnings	$1,456	1,522	1,886	5%	24%
Margin	16.2 %	16.2 %	16.5 %		
Sales by Major Product Offering					
Measurement & Analytical Instrumentation	$3,137	3,070	3,604	(2)%	17%
Valves, Actuators & Regulators	2,137	2,668	3,769	25 %	41%
Industrial Solutions	1,621	1,680	1,947	4 %	16%
Process Control Systems & Solutions	2,082	2,000	2,121	(4)%	6 %
Total	$8,977	9,418	11,441	5 %	21%

2018 vs. 2017 - Automation Solutions reported sales of $11.4 billion in 2018, an increase of $2.0 billion, or 21 percent. Underlying sales increased 10 percent ($922 million) on higher volume. Acquisitions added 10 percent ($978 million) and foreign currency translation added 1 percent ($123 million). Sales for Measurement & Analytical Instrumentation increased $534 million, or 17 percent, and Process Control Systems & Solutions increased $121 million, or 6 percent, due to increased spending by global oil and gas customers, strong MRO demand and growth of small and mid-sized projects focused on facility expansion and optimization. The acquisition of Paradigm ($113 million) also supported Measurement & Analytical Instrumentation sales. Valves, Actuators & Regulators increased

$1.1 billion, or 41 percent, led by the valves & controls acquisition ($771 million) and broad-based demand across end markets, including energy, power and life sciences. Industrial Solutions sales increased $267 million, or 16 percent, driven by favorable global trends in general industrial end markets. Underlying sales increased 14 percent in the U.S., 1 percent in Europe and 11 percent in Asia (China up 21 percent). Latin America increased 4 percent, Canada increased 14 percent and Middle East/Africa was up 9 percent. Earnings of $1.9 billion increased $364 million from the prior year on higher volume and leverage, cost reduction savings and lower restructuring expense of $22 million, partially offset by higher investment spending. Margin increased 0.3 percentage points to 16.5 percent. These results reflect a dilutive impact on comparisons from the valves & controls acquisition of 1.2 percentage points, which included an impact from higher intangibles amortization of 0.4 percentage points, or $45 million. In 2019, growth in Automation Solutions will continue to be driven by MRO activity, as well as brownfield capital investments in existing assets to expand capacity or to improve the efficiency, safety and uptime of those facilities. Steady progress in greenfield capital projects across upstream, midstream infrastructure, natural gas, chemical and hybrid markets, including life sciences and food and beverage, is also expected with orders weighted toward the second half of 2019.

2017 vs. 2016 - Automation Solutions reported sales of $9.4 billion in 2017, an increase of $441 million or 5 percent. Underlying sales decreased 1 percent ($128 million) on lower volume and slightly lower price. The valves & controls acquisition added 7 percent ($603 million), while foreign currency translation subtracted 1 percent ($34 million). Sales for Measurement & Analytical Instrumentation decreased 2 percent and Process Control Systems & Solutions decreased 4 percent due to weakness in energy-related markets, but began to improve in the second half of the year as oil prices stabilized. Valves, Actuators & Regulators increased $531 million, or 25 percent, due to the valves & controls acquisition. Industrial Solutions sales increased $59 million, or 4 percent, on improving economic conditions and industrial end markets, especially automotive. Chemical, power and life sciences were favorable. Underlying sales increased 1 percent in the U.S., were down 2 percent in Europe and increased 1 percent in Asia (China up 9 percent). Latin America decreased 20 percent, Canada decreased 6 percent and Middle East/Africa was down 6 percent. Earnings of $1.5 billion increased $66 million from the prior year. Savings from cost reduction actions and favorable foreign currency transactions comparisons of $64 million (unfavorable in the prior year) were partially offset by lower volume, and $25 million of restructuring expense and $29 million of intangibles amortization related to the valves & controls acquisition. Materials cost containment offset lower price. Margin was flat, primarily reflecting the benefit from cost reduction actions offset by dilution from the valves & controls acquisition of 1.5 percentage points.

COMMERCIAL & RESIDENTIAL SOLUTIONS

(dollars in millions)	2016	2017	2018	17 vs. 16	18 vs. 17
Sales:					
Climate Technologies	$3,944	4,212	4,454	7 %	6 %
Tools & Home Products	1,611	1,645	1,528	2 %	(7)%
Total	$5,555	5,857	5,982	5 %	2 %
Earnings:					
Climate Technologies	$902	975	972	8 %	— %
Tools & Home Products	384				