annual report

2018 financial year Exceptional growth

Sustainability Progress in many areas

Endress+Hauser

People for Process Automation

Financial highlights

	(EUR in thousands)			(CHF in thousands)		
	2018	**2017**	Change	**2018**	**2017**	Change
Net sales	2,454,594	2,240,953	9.5%	2,823,691	2,501,509	12.9%
EBIT / Operating profit	330,602	251,692	31.4%	380,314	280,957	35.4%
EBT / Profit before taxes	315,746	275,580	14.6%	363,224	307,622	18.1%
Net income	232,528	209,071	11.2%	267,493	233,380	14.6%
ROS / Return on sales	12.9%	12.3%		12.9%	12.3%	
Productivity	1.34	1.31		1.34	1.31	
Equity	2,066,892	1,819,824	13.6%	2,326,680	2,129,867	9.2%
Equity ratio	71.0%	70.2%		71.0%	70.2%	
Total capital employed	2,913,000	2,592,834	12.3%	3,279,135	3,034,575	8.1%
Capital expenditures	158,576	138,664	14.4%	182,421	154,786	17.9%
Cash flow from operating activities	304,076	237,227	28.2%	349,800	264,809	32.1%
Number of employees	13,928	13,299	4.7%			

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Annual report 2018

A look back at an extraordinary year: Supervisory Board President Klaus Endress (left), CEO Matthias Altendorf.

Extraordinary development

While Endress+Hauser experienced solid growth in 2018, what made the difference for us was how well this growth was balanced. Every industry and every region contributed, with the business performing at a consistently high level throughout the entire year. As a result, we made good achievements in terms of incoming orders, sales, profits and headcount, as well as in our sustainability rating.

This development was sustained by strong economic conditions in our markets over the year. After several years of weak investment activity, this growth was marked by catch-up effects that also reflect recovering oil prices and continually high levels of consumption. While the overall economic activity began to slow down somewhat in the second half of 2018, this development was not yet felt by the process automation industry.

Without the negative impact of foreign exchange rate fluctuations, consolidated sales would have been even stronger. But even so we performed better than the industry as a whole. Despite the fact that most currencies depreciated against the euro, the balance shifted in favor of the non-European markets. For the first time in 65 years, the US – not Germany – was our strongest sales market. In third place was China, which nearly closed the gap to the top of the leader board.

In this environment, our global sales and production presence, as well as our strategic alignment to seven core industries, all paid off. We brought a wealth of new products, solutions and services to the market and are in a good position to support our customers in the digitalization of their plants and work flows. All of this helps them to continue to improve their processes, and thus their products.

Ambitious goals We should like to thank our customers for their trust and partnership. With their high expectations and changing requirements, they challenge and thus motivate us each day to become a little better. That we are able to convince them time and again with our performance is owed to our loyal, dedicated and skilled employees. Our heartfelt thanks go out to all of them.

2019 so far has seen a continued dampening in the overall economic environment. While we have not yet felt a trend reversal in our own business during the first months of the year, we are expecting a loss of momentum in the second half of 2019. Our goals are nevertheless ambitious: We want to achieve growth in the mid-single-digit range and maintain profits at current levels. Although global politics and the financial markets continue to cause uncertainty, we believe that 2019 will again be a good year for Endress+Hauser.

Klaus Endress
President of the Supervisory Board

Matthias Altendorf
CEO of the Endress+Hauser Group

The Supervisory Board of the Endress+Hauser Group (from left): Supervisory Board President Klaus Endress and Vice President Michael Ziesemer

Hans-Peter Endress and Antonietta Pedrazzetti

Dr Heiner Zehntner (Secretary) and Dr Hans Jakob Roth

Mathis Büttiker and Thomas Kraus

Statement of the Supervisory Board

According to our own benchmarks, 2018 was our best year ever, with record incoming orders, net sales, earnings and employment. This was despite the headwinds of unfavorable exchange rates, which we also faced in the prior year. I would like to express my heartfelt thanks, both personally and on behalf of the Supervisory Board and the entire Endress family, to all our employees around the world and the Group management for their efforts.

The Supervisory Board dealt with all significant business activities of the Group in 2018. The discussions were marked by a high degree of competence and carried out in a constructive atmosphere. The Supervisory Board held four sessions. The specialist committees met as required and developed recommendations that were then presented to the entire board. The President of the Supervisory Board worked closely with the Executive Board and met with the CEO on a regular basis to exchange views.

Over the past several years, we have rejuvenated the Supervisory Board and strengthened it with competent new members. In 2018, we were occupied with changes to the Executive Board. We added Jörg Stegert to the team as new Chief Human Resources Officer, and created the position of Chief Operating Officer, which Dr Andreas Mayr assumed in March 2019. We furthermore gave thought to who should represent the Endress family on the Supervisory Board in the future. Our goal is to get the younger generation involved more deeply when the next change occurs, while ensuring a high degree of continuity.

PricewaterhouseCoopers AG in Basel, Switzerland, completed its audit of the 2018 consolidated financial statements in March and April 2019 and granted an unqualified opinion. At the meeting on 15 April 2019, the Supervisory Board acknowledged the annual report and recommended acceptance to the Annual General Meeting. The consolidated financial statements were adopted by the Annual General Meeting of Endress+Hauser AG on 13 May 2019.

Despite a slowdown in the overall business environment, we are looking forward with confidence. We have a wealth of promising new products in the pipeline. The first four months of the year were marked by good growth. And even if the business cools off over the remainder of the year as expected, we still anticipate solid development in 2019. So long as we focus on our customers and their needs, together we can be successful even in an increasingly difficult environment.

Klaus Endress
President of the Supervisory Board

The Executive Board of the Endress+Hauser Group (from left): Chief Executive Officer Matthias Altendorf, Chief Financial Officer Dr Luc Schultheiss

Chief Operating Officer Dr Andreas Mayr and Chief Human Resources Officer Jörg Stegert

Corporate Director Dr Manfred Jagiella (Process Analytical Business), General Counsel Dr Heiner Zehntner (Legal) and Chief Information Officer Pieter de Koning

Chief Sales Officer Nikolaus Krüger

Changes within the Executive Board

The human resources department of the Endress+Hauser Group has a new head. Jörg Stegert joined the Executive Board as Chief Human Resources Officer on 1 October 2018. He was most recently head of human resources at Knorr-Bremse AG in Munich, Germany. There he advised the board of management and coordinated centralized projects in the human resources area such as the introduction of international structures and a modern IT platform.

Jörg Stegert studied business administration with an emphasis on human resources and management science at the Technical University Berlin. He then worked at Siemens for 12 years before joining Knorr-Bremse AG in 2009. The German native (born 1970) is married and the father of three children. He succeeded Roland Kienzler, who left Endress+Hauser after 13 years at his own request to pursue other opportunities outside the Group.

In 2019, Dr Andreas Mayr, who has been a member of the Executive Board responsible for marketing, communication and technology since 2016, began to dedicate his entire time to managing the Group. On 1 March 2019, he took over as Chief Operating Officer responsible for production and support at Endress+Hauser. In this function he serves as deputy CEO under Matthias Altendorf, CEO of the Group.

Andreas Mayr (born 1961) studied physics at the University of Karlsruhe where he earned his doctorate. After several positions at measurement instrument manufacturer Eckardt AG, he joined Endress+Hauser in 1998. He was most recently Chairman of the Executive Board of Endress+Hauser SE+Co. KG in Maulburg, the Group's center of competence for level and pressure measurement technology. Andreas Mayr is a native of Austria and is married.

The Executive Board of the Endress+Hauser Group also includes Dr Manfred Jagiella (as Corporate Director responsible for the Process Analysis Business), Chief Information Officer Pieter de Koning (IT), Chief Sales Officer Nikolaus Krüger (sales, service and engineering), Chief Financial Officer Dr Luc Schultheiss (finance) and General Counsel Dr Heiner Zehntner (legal).

2018 highlights

Anniversary: Employees around the world celebrate Endress+Hauser's **65th anniversary**.

Innovation spirit: More than 300 inventors from the entire Group come together in Freiburg, Germany for the annual **Innovators' Meeting**.

Expansion: To serve customers even better in **Portugal**, Endress+Hauser moves into its own sales office building near the capital of Lisbon.

January | February | March | April | May | June

Expansion: Endress+Hauser opens its third plant in Suzhou, **China**. The electromagnetic flowmeter calibration facility, which can handle instruments with a nominal diameter of up to 3,000 millimeters, establishes new benchmarks.

Farewell: The Endress+Hauser Group mourns family shareholder **Yvonne Endress**, who dies at the age of 68 after a long illness.

Data security: Endress+Hauser is the first industrial company to be certified by **EuroCloud**. The Netilion IIoT hub receives a four-star rating.

Collaboration: **SAP**, market leader in enterprise software, and Endress+Hauser strengthen their cooperation in the area of IIoT applications.

Change: **Jörg Stegert** (48) assumes responsibility for the Group's personnel area as Chief Human Resources Officer.

Opening: In Nesselwang, Germany, Endress+Hauser inaugurates a new production facility for **temperature and system products**.

July | August | September | October | November | December

Awards deluge: The iTHERM TrustSens is presented not less than seven industry awards in one year. Among others, the self-calibrating thermometer receives the **AMA Innovation** Award and the **Hermes Award**.

Global presence: Endress+Hauser opens a state-of-the-art calibration and training center in **Saudi Arabia**.

Customer intimacy: Endress+Hauser sponsors the annual meeting of the **NAMUR** professional association and debates with process technology practitioners how field instruments can support the digital transformation.

Endress+Hauser Group Management Report

Endress+Hauser achieved a strong increase in sales and profit in 2018. High investments, numerous additional jobs, a wealth of new products and further progress in the field of sustainability are evidence of good development.


Endress+Hauser

The Endress+Hauser Group

Corporate profile Endress+Hauser has been a reliable partner for more than 65 years. We support our customers in the process industry to improve their products and to manufacture them even more efficiently.

Our core expertise lies in the fields of process and laboratory instrumentation. With our products, solutions and services, we help our customers design safe, reliable, efficient and environmentally friendly processes across the entire life cycle. Our customers value our deep understanding of their applications and the special requirements of their industry.

Our offering for process automation includes products, solutions and services for flow, level, pressure and temperature measurement, process analysis and data management. In the field of laboratory automation, under the Analytik Jena brand we market analytical instruments and bioanalytical systems.

Most of our commercial customers operate in the food & beverage, chemical, life sciences, oil & gas, water & wastewater, power & energy and primaries & metals industries. In laboratory automation we also serve customers from healthcare and academia.

Group structure At the end of 2018, the Group comprised 134 companies in 48 countries. The parent company of the Group is Endress+Hauser AG in Reinach, Switzerland. Our production centers focus our expertise in research & development, production, product management, quality assurance and logistics, while the sales centers act as local partners for the market and customers. In collaboration with our representatives they are responsible for worldwide sales, marketing and services.

Production centers and sales centers are legally independent business units, as are the support and holding companies that perform cross-corporate functions. Some of the recently acquired companies also have integrated structures for production, sales and support functions.

Group management lies in the hands of the Executive Board of Endress+Hauser AG, chaired by the CEO. Business and organizational regulations define the competencies and responsibilities of the Executive Board and the independent Supervisory Board.

Values and strategy In order to sharpen our corporate profile as a service and solutions provider and in view of the expansion of our activities in the field of process analysis as well as laboratory analysis, we revised our vision and mission statements three years ago. The vision defines the objectives of our corporate development, while the mission derives a mandate from the vision.

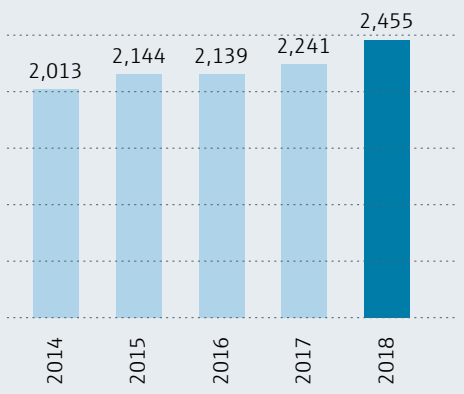
Aligned along these principles, our Strategy 2020+ outlines our medium- and long-term objectives for our process automation business which guide our entrepreneurial actions. It is based on seven strategic focal points that are designed to help us align the Group with dynamic market and customer requirements. For laboratory analysis, our subsidiary Analytik Jena AG revised its own business strategy in close cooperation with the Group management. It envisions expanding and strengthening the product range and increasing the access to markets and customers.

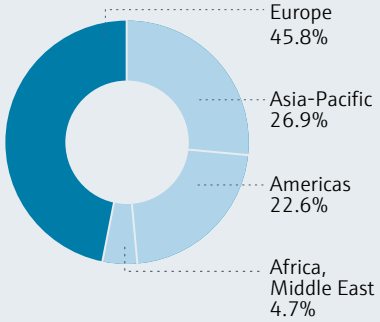
Endress+Hauser is founded on a corporate culture firmly rooted in the company. Fundamental principles and values have been recorded in the Spirit of Endress+Hauser. In addition, a binding Endress+Hauser Code of Conduct has been implemented across the Group. A Brand Guide raises our employees' awareness of the importance of the Endress+Hauser brand and how to deal with it correctly.

Technology and innovation Last year we launched 54 new products and 452 device options among our markets and customers. We applied for 287 patents at patent offices around the world. This is clear evidence of Endress+Hauser's strong focus on innovation. Nearly 7,800 active patents and patent applications protect our intellectual property.

We spent 184.2 million euros, 13.5 million euros more than in 2017, on research & development. This equates to 7.5 percent of our consolidated sales. We have more than 1,000 employees active in the areas of research and development.

Net sales and net sales by regions
(EUR in millions)





Growth market: Endress+Hauser significantly increased its business with services such as on-site calibrations in 2018.

Market development

Business environment According to the International Monetary Fund (IMF), the global economy, which was still strong at the beginning of 2018, cooled noticeably in the second half of the year. The global economy grew in 2018 by 3.6 percent in real terms, 0.2 percentage points below the previous year. Western industrialized nations recorded an average plus of 2.2 percent. At 1.8 percent, the Eurozone developed considerably slower than the year before. The German economy performed below average (1.5 percent). The USA recorded an increase of 2.9 percent, Japan of 0.8 percent.

In emerging and developing countries, business dynamism slowed down as well and reached an average of 4.5 percent. China (6.6 percent) again lost momentum, while India (7.1 percent) continued to pick up speed. Brazil (1.1 percent) remained at a low level; Russia (2.3 percent) clearly improved.

Market trends Despite turbulence in the European and international political arena, the automation industry can look back at a strong year of business. According to the automation trade association within the German Electrical and Electronic Manufacturers' Association (ZVEI), incoming orders in the process automation industry grew at a high single-digit rate. The trade association refers to a strong and stable development over the entire year. According to ZVEI, this growth was driven by North America, as well as Asia, in particular China. Export-oriented countries in Europe also performed well. Every sector developed in a positive manner, with digitalization providing key impulses for growth. According to the association, the challenges stemmed from foreign exchange fluctuations, in addition to material and skilled labor shortages.

Competition The lines between factory and process automation are becoming increasingly blurred, a development driven in part by digitalization and modularization of production plants. Major competitors are strengthening their efforts to position themselves accordingly. Within our own closer market environment, the competitive situation has not changed significantly. However, we are experiencing stronger competition from local providers, particularly in emerging countries. In addition, providers in the field of factory automation are increasingly penetrating the market for process sensor technology.

Endress+Hauser in the marketplace Consolidated sales for the Endress+Hauser Group increased significantly in 2018. We have grown across all regions, industries and fields of activity. The positive development continued throughout the year. According to our own observations, we grew slightly faster than the instrumentation market as a whole, especially when we look at growth in local currencies and include only continuing operations.

The industrial environment was further marked by catch-up effects in 2018. Many companies refrained from investing in prior years. Like in 2017, here we experienced a trend reversal. Somewhat higher oil prices also contributed to the increased investment activity again. Finally, loose monetary policies and low inflation are still fueling consumption, thus keeping demand at a high level.

Europe experienced higher growth than the general economic environment. In particular, strong exporters such as Germany, Italy and Belgium performed well. With Brexit leading to the depreciation of the British pound, our UK business has suffered as a result. The business in Turkey has been impacted by the high rate of inflation. In these countries our focus is on higher local value-add through more service and engineering activities. The Russian economy continued to struggle with international sanctions.

Our business in China experienced double-digit growth. Apart from the revival of the project business, changes in our sales structure are having a positive impact. India and Singapore showed strong growth as well. We also recorded robust growth in Australia.

The business in the Americas also gained momentum. After 65 years, the US replaced Germany as our strongest sales market. Canada and Mexico experienced strong growth. While Chile developed positively, the high rate of growth in Brazil was offset by heavy currency losses. Our manufacturing in Itatiba is proving to be a competitive advantage.

Even in Africa and the Middle East, we grew at a double-digit rate despite the rather unstable political and economic situation. What stands out here is the solid development in Qatar. South Africa struggled with currency exchange fluctuations as well.

Every industry contributed to the growth in 2018. From an absolute and percentage standpoint, the highest growth occurred in the oil & gas sector. Still, primaries & metals, in addition to water & wastewater and chemical industries, also gained momentum. While the food & beverage and life sciences industries show solid growth, the power & energy sector increased only slightly.

On the other hand, we experienced above-average growth with our analytics products, especially in the area of advanced process analyzers. We are still not satisfied with the development of the laboratory analysis business. Strong growth in flow measurement technology reflects the positive development in the chemical, oil & gas and water & wastewater industries. Our comprehensive level measurement portfolio also showed noticeable growth.

The service business has grown above average, with increasing demand for our expertise in the maintenance and calibration of measurement instruments. Knowledge transfer is gaining in importance, made available through webinars as well as in person. Our automation solutions business has developed extremely positively. The adjustment of our portfolio with a focus on specific applications is paying off here.

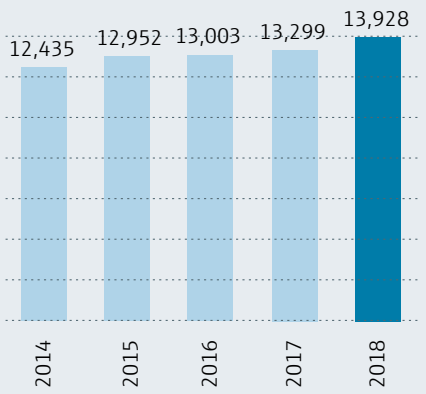
Corporate development

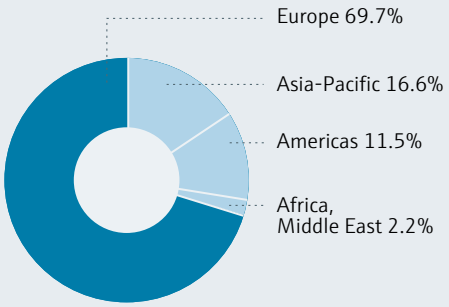
General development The past year was marked by strong growth in sales and units produced. However, in 2018 we were able to improve beyond the key economic indicators: We also made progress in the area of social responsibility and ecological indicators. This reflects our goal of maintaining a balanced corporate development.

Company foundations, acquisitions and sales In the sales area, last year we further strengthened our presence in the growing Vietnam market with the establishment of Endress+Hauser (Vietnam) LLC, where we were already active through a sales office. The new legal structure now allows us to further expand our business activities. Similar steps are also being prepared in Kazakhstan and Panama.

In recent years we expanded our portfolio through acquisitions, especially in the analysis and measurement of quality-relevant parameters. We furthermore used 2018 as an opportunity to better integrate new companies into the

Employees of the Endress+Hauser Group





global Endress+Hauser network, particularly when it comes to sales and service concerning these products, but also where a further development and wider use of the corresponding technologies is desirable.

Strategic partnerships In order to deal with the challenges of digitalization, we are seeking collaboration with partners, an activity that involves expanding our expertise and solving issues together. In 2018 we established a strategic alliance with SAP, one of the leading providers of enterprise software. The alliance is designed to promote cooperation in process control applications in Industrial Internet of Things (IIoT) environments, from the development of common solutions to sales and customer implementation.

Economic indicators With an increase in net sales of 9.5 percent in 2018, we significantly exceeded our own expectations despite the negative impact of foreign exchange rates. Even though we benefited from special effects in the previous year, our return on sales rose once again to 12.9 percent (2017: 12.3 percent). It is thus almost reaching our strategic target of 13.0 percent.

We also improved productivity – defined as net value added in proportion to personnel expenditure – to 1.34 (2017: 1.31). It is now slightly above our strategic target of 1.33. The equity ratio at the end of the year increased to 71.0 percent, 0.8 percentage points more than the previous year. Our strategy requires a minimum ratio of 70.0 percent.

Social and environmental indicators Endress+Hauser is keenly aware of its economic, social and ecological responsibilities. We understand creation and preservation of secure jobs to be part of our corporate social responsibility. By the end of 2018, the workforce at Endress+Hauser numbered 13,928 – 629 or 4.7 percent more employees than at the same time the previous year.

Our commitment to in-house vocational training was as strong as ever. Across the whole Group, we trained 306 young

Income statement in brief (EUR in thousands)

	2018	2017	Change	
Net sales	2,454,594	2,240,953	213,641	9.5%
Total operating expenses	–2,176,427	–2,027,192	–149,235	7.4%
EBIT / Operating profit	**330,602**	**251,692**	**78,910**	**31.4%**
Result from associated companies	442	43,555	–43,113	
Net financial result	–15,298	–19,667	4,369	
EBT / Profit before taxes	**315,746**	**275,580**	**40,166**	**14.6%**
Income taxes	–83,218	–66,509	–16,709	25.1%
Net income	**232,528**	**209,071**	**23,457**	**11.2%**

Balance sheet in brief (EUR in thousands)

	2018	2017	Change	
Non-current assets	1,268,869	1,197,760	71,109	5.9%
Inventories	360,209	275,813	84,396	30.6%
Accounts receivable	531,358	481,067	50,291	10.5%
Short-term financial assets	214,409	226,914	–12,505	–5.5%
Cash and cash equivalents	538,155	411,280	126,875	30.8%
Total assets	**2,913,000**	**2,592,834**	**320,166**	**12.3%**
Total equity	2,066,892	1,819,824	247,068	13.6%
Retirement benefit obligations	307,364	301,866	5,498	1.8%
Other non-current liabilities	102,807	91,800	11,007	12.0%
Trade accounts and notes payable	112,979	99,148	13,831	13.9%
Other current liabilities	322,958	280,196	42,762	15.3%
Total assets	**2,913,000**	**2,592,834**	**320,166**	**12.3%**

people. This equates to a trainee ratio of 2.3 percent. We continued to sponsor talented and keen people in their engineering and business administration studies and again sought cooperation with colleges and universities around the world at many levels.

A new development in the second half of the year involved the roll-out of a vocational training program in India. Eight young people are gaining a career perspective through an electronics technician apprenticeship. In the United States and China, we eventually want to establish similar vocational training models similar to the dual vocational system in Germany and Switzerland.

This year we have submitted our fifth sustainability report together with our Group management report (starting on page 60). In this area one of the key indicators for us is the EcoVadis benchmark. In last year's audit we achieved 68 out of 100 points (2017: 66 points), placing us in the top 5 percent of all companies that were evaluated. Our strategic goal is to place in the top 25 percent.

Results of operation, financial position and net assets

Sales development In 2018 our net sales grew from 2.241 billion to 2.455 billion euros, although exchange rate effects again had a negative impact. All major currencies depreciated against the euro over the annual average. At constant currencies, we would have generated additional sales of more than 70 million euros and increased our sales by 12.7 percent. If we only consider continuing operations, our growth rate would have been 12.8 percent.

In Europe, we recorded a plus of 7.3 percent in 2018. In the Asia-Pacific region, our sales grew by 10.6 percent, in the Americas by 13.0 percent and in Africa and the Middle East by 10.0 percent. The percentage of sales generated outside of Europe is constantly growing and has reached 54.2 percent.

Consolidated income statement Earnings before interest and taxes (EBIT) increased significantly more than sales by 31.4 percent to 330.6 million euros. Total operating expenses grew at a below-average rate of 7.4 percent to 2.176 billion euros.

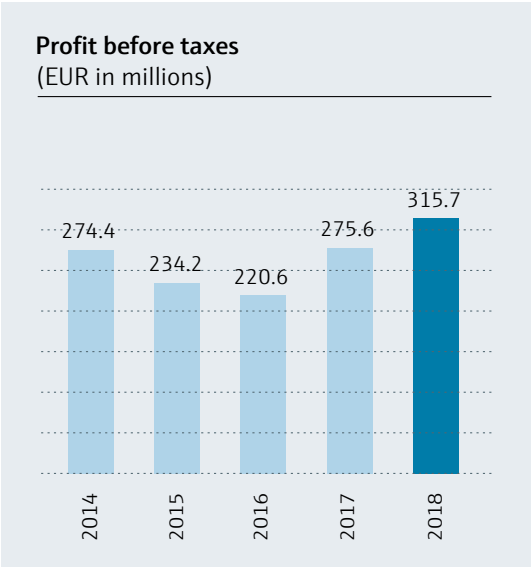
In particular, personnel expenses – benefiting from the development of exchange rates – rose well below average by 5.6 percent to 957.8 million euros. Expenses for purchased goods and services increased in line with our sales by 9.5 percent to 674.4 million euros. Other operating expenses grew by 10.2 percent to 441.6 million euros. They also include sales-related commissions for our representatives and costs for several large trade fairs. Despite our investment activities that have been at a constantly high level over recent years, depreciation and amortization has slightly decreased by –0.9 percent to 102.6 million euros. This reflects changes in exchange rates and the absence of non-recurring effects.

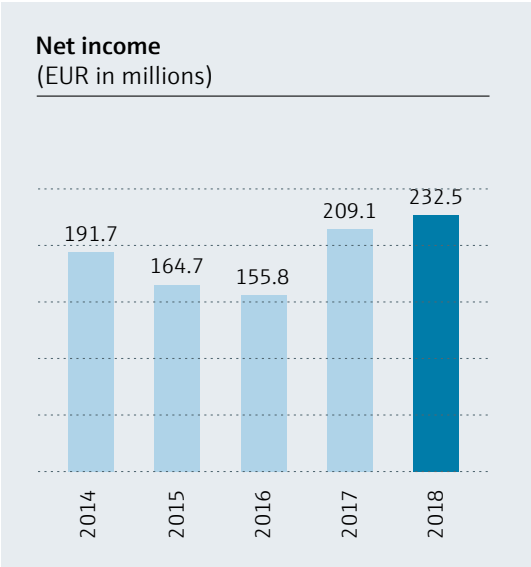
Our profit before taxes (EBT) rose by 14.6 percent to 315.7 million euros, although the proceeds from the sale of a stake in 2017 had a strong impact on this figure. At –15.3 million euros, the financial result is still negative, but significantly better than the previous year (–19.7 million euros). We succeeded in reducing net foreign exchange losses by 51.8 percent to –12.9 million euros. For the first time in years, our interest result was positive again at 0.6 million euros. However, we have to post a negative result from our financial assets of –3.0 million euros (2017: 7.2 million euros).

Our net income increased by 11.2 percent to 232.5 million euros. This results from a higher effective tax rate of 26.4 percent (2017: 24.1 percent), partly due to the change in the composition of our earnings.

Consolidated balance sheet The Endress+Hauser Group's non-current assets increased in 2018 by 5.9 percent to 1.269 billion euros. Tangible fixed assets reached 856.2 million euros at the end of the year, 8.2 percent more than in 2017.

The Group's current assets grew by 17.9 percent to 1.644 billion euros. Influenced by the reallocation of funds, our short-term financial assets decreased by –5.5 percent to 214.4 million euros, while cash and cash equivalents rose





by 30.8 percent to 538.2 million euros. To ensure our ability to deliver, we have built up inventories by 30.6 percent to 360.2 million euros. The trade accounts receivable climbed 11.8 percent to 437.8 million euros following the strong growth in sales.

Our equity increased by 13.6 percent to 2.067 billion euros, while total capital employed (2.913 billion euros) grew at the same time by 12.3 percent. The equity ratio thus rose by 0.8 percentage points to 71.0 percent – for our industry a very respectable figure.

Retirement benefit obligations rose in 2018 by 1.8 percent to 307.4 million euros. Long- and short-term provisions increased to 160.5 million euros, 7.8 percent above last year. This includes provisions for variable and performance-based salary components, which increased in 2018 at an above-average rate. The level of bank loans increased to 5.4 million euros; we only use this method of financing where internal financing is not possible or sensible. Our total liabilities increased by 9.5 percent to 846.1 million euros.

The Group's healthy financial situation is also shown in a strong cash flow from operating activities. This figure grew by 28.2 percent to 304.1 million euros, caused by our enhanced profitability.

Capital expenditures Last year we invested 158.6 million euros in buildings, plant and machinery, software and IT, 14.4 percent more than in 2017. We have strengthened our sales and production network throughout the world. Owing to delays in planning and execution, some of the budgeted expenses of 223 million euros have been deferred beyond 2018.

At 61.3 million euros, the largest single project concerns the expansion of our competence center for flow measurement engineering in Reinach, Switzerland. In Maulburg, Germany, the production facility for level and pressure measurement engineering is being expanded. The plan is to invest 46.0 million euros over the coming years. Another 12.2 million euros was spent on the expansion of a silicon pressure sensor production facility in Stahnsdorf near Berlin.

Our center of competence for temperature measurement engineering and system products in Nesselwang, Germany, expanded as well at a cost of 11.2 million euros. Innovative Sensor Technology IST AG in Ebnat-Kappel, Switzerland, again enlarged its manufacturing facility for primary sensors with a budget of 14.8 million euros.

The German sales center invested 12.0 million euros in the modernization of the Weil am Rhein location. In Lyon, we expanded the regional office of our French sales center for 2.5 million euros. It also houses our European sales and support organization for advanced analyzers. In Saudi Arabia a new calibration and service center was put into operation in the industrial hub of Al-Jubail, an investment of 2.9 million euros.

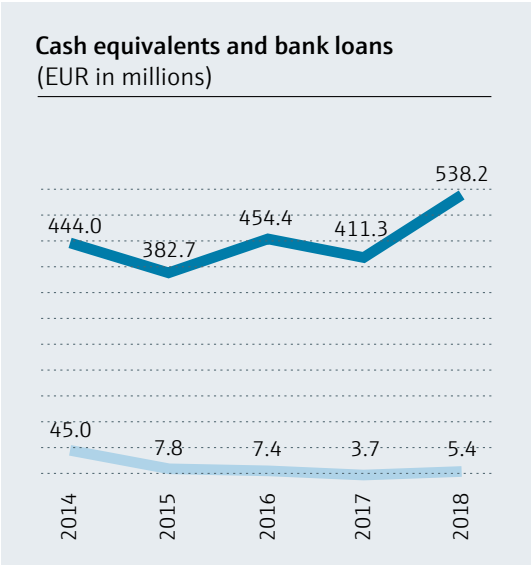
Supplemental report

Events after the end of the financial year No events of particular significance took place after the end of the business year.

Risk report

Risk management On principle, Endress+Hauser takes only calculable risks when making business decisions. According to the principles of corporate governance, we introduced an Internal Control System, designed to meet the needs of our company.

The company attempts to reduce uncertainty resulting from economic and sector-related developments, fluctuations in exchange rates, political events of worldwide significance or natural disasters by means of broad-based support in the market in terms of industries, regions and customer segments as well as products, solutions and services. The Supervisory



Board plays an important role as a supervisory and advisory body and supports the work of the Executive Board constructively, thus increasing the quality of all fundamental business decisions.

Risks for the company In accordance with its risk-management guidelines, the Endress+Hauser Group raises awareness of business risks at all levels and encourages all associates to avoid and minimize unnecessary risk. A Group standard for Business Continuity Management has been introduced internationally. Endress+Hauser ensures appropriate cover is provided for the entire Group in terms of essential liability and claims risks. There are no significant risks resulting from court cases.

We reduce financial risks from exchange and interest rates with the aid of derivative hedging instruments. Explanations of our financial risk management can be found in our Accounting Policies. Customer-specific manufacturing in the United States, China, India and Brazil reduces the influence of fluctuations in exchange rates. These production sites invoice almost entirely in their national currencies. Against this background, we also plan to set up a production facility in Russia over the next few years.

A consistent IT security concept guarantees an exceptionally high level of protection from loss of data. Environmental and security risks connected with our activities and our production sites are negligible.

Report on opportunities

Opportunity management Opportunities for the company arise from its strategic focus, economic development, the outcomes of its research & development work and the performance and achievements of the company's employees. In all these areas Endress+Hauser pursues systematic approaches to safeguard sustained business success.

Opportunities for the company Endress+Hauser's broad-based focus allows the company to partake in the growth of varied industries in the process industry. The worldwide presence with sales and production makes sure that we remain dynamic as a business, especially in emerging countries. To make sure that enough talented and dedicated employees, apprentices and trainees find their way to us, we rely on activities at many levels to make Endress+Hauser a more attractive employer. These activities, which are adapted to the needs of the respective local organization, include continuous investments in up-to-date professional education and training programs, targeted measures for a better work-life balance and retirement models tailored to the needs of the employee.

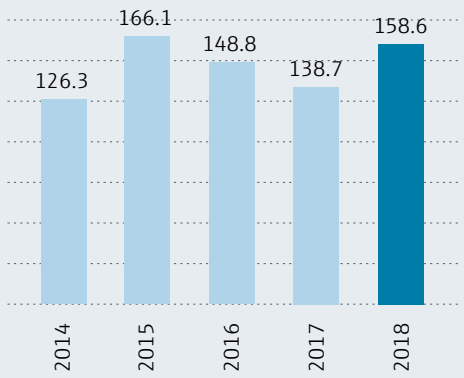
Our close cooperation with selected universities, colleges and research facilities, as well as wide-ranging activities in research & development, keep our powers of technological innovation at a high level. This is supplemented by increased efforts to create new expertise and skills outside our established structures with the help of start-ups and corporate venturing. These new entities are designed to serve over time as a breeding ground for innovations across the entire company.

Digitalization, which offers the potential for driving efficiency across the entire value chain, is currently providing additional opportunities for the Group companies. We want to grow above average in the mid to long term by employing advanced analytical engineering to a greater degree in process technology applications, as well as by developing the market for laboratory analysis.

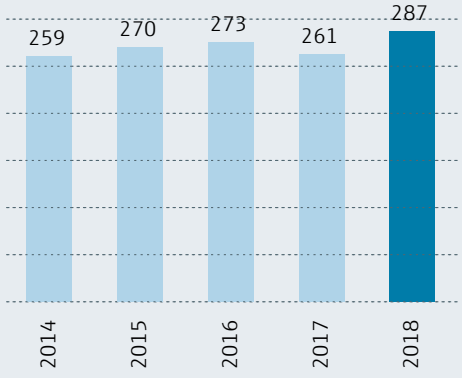
Report on expected developments

Economic environment The IMF does not currently expect the global economy to head for a recession, but sees higher risks for a significant economic downturn. The organization expects an increase in global economic performance in 2019

Capital expenditures
(EUR in millions)



Patent applications of the Endress+Hauser Group



of only 3.3 percent (as of April 2019). The experts have thus revised their expectations significantly downwards compared with the forecasts made in October 2018. Growth is expected to fall to 4.4 percent in developing and emerging countries and to 1.8 percent in industrialized countries.

According to the IMF, the Eurozone will experience notably weaker growth (1.3 percent), with Germany expected to show below average development (0.8 percent). According to the experts, the US economy (2.3 percent) will be cooling off as well. Japan (1.0 percent), while at a low level, could increase slightly. The organization is forecasting the lowest growth rate in years for China (6.3 percent), while India is gaining momentum (7.3 percent). Experts believe Russia (1.6 percent) will again grow at a slower pace. Brazil (2.1 percent), on the other hand, could pick up speed.

In its prognosis the IMF sees more downside than upside risks over the midterm. According to the organization, one of the significant risks for the growth of the global economy is an escalation of the trade dispute between the US and China. Against the backdrop of heavy private and public debt, the experts see further risks for the development of the economy, such as the consequences of Brexit or further weakening of the Chinese economy.

Objectives of company development According to an economic survey carried out by the Association of German Chambers of Industry and Commerce (DIHK), investment activity slowed down notably at the beginning of 2019. The association pointed out that because companies are increasingly concerned about demand, plants restricted their operations to replacement demand, instead of further increasing capacity. A report from the German Chambers of Commerce Abroad (AHK) confirms this pessimistic general sentiment.

The instrumentation and automation business lags about six months behind economic cycles. The German organization ZVEI therefore expects growth in the mid-single-digit percentage range for the industry, starting from a very high level. We also budgeted a mid-single-digit increase in our net sales consolidated in euros. We expect a slightly higher return on sales compared to 2018. We want to further increase our equity ratio, plan investments approximately totaling 260 million euros and expect to create more than 500 new jobs worldwide.

The new year is off to a very good start. In almost all industries, regions and fields of activity, we could continue on the growth path of the previous year. In terms of incoming orders, we even exceeded our targets in the first three months. We assume that this trend will weaken towards the middle of the year.

At the same time, we see significant risks for economic growth. We will therefore continue to proceed with the necessary prudence in all our entrepreneurial decisions to be able to flexibly react to short-term developments. Additionally, we will employ personnel only where it is required and justified by business development and strategic decisions.

Important projects A large portion of the earmarked investments will again flow into our production. We will continue to engage in the large projects in Reinach, Switzerland, and Maulburg, Germany. Our center of competence for liquid analysis will begin construction of a new office building in Gerlingen, Germany. Plans are also in place to expand the sensor production facility in Waldheim, Germany.

In Cernay, France, and Aurangabad, India, we will once again increase the capacity of our flowmeter production facilities. A new campus will be constructed in Houston, Texas, which will encompass the headquarters for our gas analysis specialists, a calibration and training center, and offices for our regional sales staff and local representative.

General statement on corporate development Thanks to our broad support base in terms of products, regions and industries, and also owing to our strategic alignment, we see ourselves as well positioned. Our independence as a financially sound family company allows us to further develop our group of companies with a long-term perspective and to take necessary decisions at short notice.

Unpredictable events and unexpected developments have strongly shaped recent years and could also influence the economic situation in future. In addition, most experts believe that the peak of the economic cycle has passed. We meet these challenges by acting with reason and caution. Given the good start to the current year, we are confident we can achieve our objectives and turn 2019 into another successful year for the Endress+Hauser Group.

Consolidated balance sheet

Assets

		EUR in thousands		CHF in thousands	
Non-current assets	Notes	**Year ended 31.12.2018**	**Year ended 31.12.2017**	**Year ended 31.12.2018**	**Year ended 31.12.2017**
Tangible fixed assets	11	856,177	791,609	963,790	926,475
Intangible assets	12	159,589	161,196	179,648	188,659
Investments in associated companies	13	0	3,760	0	4,401
Long-term financial assets	14	161,719	155,683	182,045	182,207
Deferred tax assets	21	91,384	85,512	102,870	100,081
Total non-current assets		**1,268,869**	**1,197,760**	**1,428,353**	**1,401,823**
Current assets					
Inventories	15	360,209	275,813	405,484	322,803
Trade accounts receivable	16	437,837	391,620	492,869	458,340
Current income tax assets		5,498	11,053	6,189	12,936
Other accounts receivable	17	88,023	78,394	99,087	91,750
Short-term financial assets	14	214,409	226,914	241,358	265,573
Cash and cash equivalents	18	538,155	411,280	605,795	481,350
Total current assets		**1,644,131**	**1,395,074**	**1,850,782**	**1,632,752**
Total assets		**2,913,000**	**2,592,834**	**3,279,135**	**3,034,575**

The notes are an integral part of these consolidated financial statements.

Equity and liabilities

		EUR in thousands		CHF in thousands	
Capital and reserves	Notes	**Year ended 31.12.2018**	**Year ended 31.12.2017**	**Year ended 31.12.2018**	**Year ended 31.12.2017**
Share capital		14,842	14,842	22,000	22,000
Other reserves		82,101	33,188	92,420	38,842
Retained earnings		1,960,570	1,764,627	2,201,702	2,060,637
Total capital and reserves attributable to equity holders		**2,057,513**	**1,812,657**	**2,316,122**	**2,121,479**
Non-controlling interest		9,379	7,167	10,558	8,388
Total equity		**2,066,892**	**1,819,824**	**2,326,680**	**2,129,867**
Liabilities					
Long-term loans	19	7,424	5,753	8,357	6,733
Deferred tax liabilities	21	55,592	46,195	62,579	54,065
Retirement benefit obligations	22	307,364	301,866	345,997	353,295
Long-term provisions	23	34,975	33,166	39,371	38,816
Other long-term liabilities	25	4,816	6,686	5,421	7,825
Total non-current liabilities		**410,171**	**393,666**	**461,725**	**460,734**
Short-term loans	19	28,619	27,275	32,216	31,922
Trade accounts and notes payable	24	112,979	99,148	127,179	116,040
Current income tax liabilities		22,704	12,743	25,558	14,914
Short-term provisions	23	125,480	115,709	141,252	135,422
Other short-term liabilities	25	146,155	124,469	164,525	145,676
Total current liabilities		**435,937**	**379,344**	**490,730**	**443,974**
Total liabilities		**846,108**	**773,010**	**952,455**	**904,708**
Total equity and liabilities		**2,913,000**	**2,592,834**	**3,279,135**	**3,034,575**

The notes are an integral part of these consolidated financial statements.

Consolidated income statement

		EUR in thousands		CHF in thousands	
	Notes	**2018**	**2017**	**2018**	**2017**
Net sales	6	**2,454,594**	**2,240,953**	**2,823,691**	**2,501,509**
Change in inventories		22,701	6,826	26,115	7,620
Own work capitalized		9,110	9,142	10,480	10,205
Other operating revenues		20,624	21,963	23,725	24,517
Purchased goods and services		−674,367	−616,046	−775,773	−687,674
Personnel expenses	7	−957,824	−906,717	−1,101,852	−1,012,141
Depreciation and amortization		−102,622	−103,519	−118,053	−115,555
Other operating expenses	8	−441,614	−400,910	−508,019	−447,524
Total operating expenses	9	**−2,176,427**	**−2,027,192**	**−2,503,697**	**−2,262,894**
EBIT / Operating profit		**330,602**	**251,692**	**380,314**	**280,957**
Result from associated companies	13	442	43,555	508	48,619
Net financial result	10	−15,298	−19,667	−17,598	−21,954
EBT / Profit before taxes		**315,746**	**275,580**	**363,224**	**307,622**
Income taxes	21	−83,218	−66,509	−95,731	−74,242
Net income		**232,528**	**209,071**	**267,493**	**233,380**
Attributable to					
Equity holders		232,748	209,559	267,746	233,925
Non-controlling interest		−220	−488	−253	−545
		232,528	**209,071**	**267,493**	**233,380**

The notes are an integral part of these consolidated financial statements.

Consolidated comprehensive income

		EUR in thousands		CHF in thousands	
	Notes	**2018**	**2017**	**2018**	**2017**
Net income		**232,528**	**209,071**	**267,493**	**233,380**
Other comprehensive income					
Actuarial gains (+) and losses (–) from defined benefit plans	22	–3,704	2,240	–4,261	2,500
Income taxes	21	1,405	–431	1,616	–481
Items that can not be reclassified to net income		**–2,299**	**1,809**	**–2,645**	**2,019**
Gains (+) or losses (–) from translating the financial statements of foreign subsidiaries	2.4	51,383	–143,075	59,109	–159,710
Items that can be reclassified to net income		**51,383**	**–143,075**	**59,109**	**–159,710**
Other comprehensive income		**49,084**	**–141,266**	**56,464**	**–157,691**
Comprehensive income		**281,612**	**67,805**	**323,957**	**75,689**
Attributable to					
Equity holders		281,697	69,033	324,055	77,060
Non-controlling interest		–85	–1,228	–98	–1,371
		281,612	**67,805**	**323,957**	**75,689**

The notes are an integral part of these consolidated financial statements.

Consolidated statement of changes in equity

All amounts in EUR thousands	Share capital	Other reserves	Retained earnings	Capital and reserves – attributable to equity holders	Capital and reserves – attributable to non-controlling interest	Total equity
Balance at 31 Dec 2016	**14,842**	**173,631**	**1,582,045**	**1,770,518**	**8,317**	**1,778,835**
Net profit for the period			209,559	209,559	–488	209,071
Change in non-controlling interest			107	107	168	275
Dividend payments			–27,001	–27,001	–90	–27,091
Currency translation differences		–142,252	–83	–142,335	–740	–143,075
Actuarial gains and losses		1,809		1,809		1,809
Balance at 31 Dec 2017	**14,842**	**33,188**	**1,764,627**	**1,812,657**	**7,167**	**1,819,824**
Adjustments for restatement IFRS 9			1,282	1,282	183	1,465
Adjustments for restatement IFRS 15			–479	–479		–479
Balance at 1 Jan 2018	**14,842**	**33,188**	**1,765,430**	**1,813,460**	**7,350**	**1,820,810**
Net profit for the period			232,748	232,748	–220	232,528
Change in non-controlling interest			–2,073	–2,073	2,114	41
Dividend payments			–35,571	–35,571		–35,571
Currency translation differences		51,212	36	51,248	135	51,383
Actuarial gains and losses		–2,299		–2,299		–2,299
Balance at 31 Dec 2018	**14,842**	**82,101**	**1,960,570**	**2,057,513**	**9,379**	**2,066,892**

The share capital is fully paid and composed of 2.2 million ordinary shares with a par value of CHF 10 per share.
During the business year 2018 dividends of 18.60 CHF per ordinary share have been paid (in total 40.92 mCHF).
The notes are an integral part of these consolidated financial statements.

Consolidated cash flow statement

All amounts in EUR thousands	Notes	2018	2017
Cash flow from operating activities			
Net income		232,528	209,071
Depreciation and amortization	11, 12	102,622	103,519
Income tax charge	21	83,218	66,509
Result from associated companies	13	–443	–546
Net financial result net of foreign exchange gains (+) / losses (–)		2,365	–7,155
Result on sale of assets and investments		2,287	–47,379
Change in provisions		9,694	42,726
Other non-cash items		18,224	–16,898
Change in inventories, trade accounts receivable and other current assets		–143,241	–70,013
Change in financial assets		26,982	–8,126
Change in trade payables und other liabilities		35,221	31,457
Income taxes paid		–65,381	–65,938
Total cash flow from operating activities		**304,076**	**237,227**
Cash used in investing activities			
Purchase of fixed assets		–155,274	–138,106
Purchase of subsidiaries net of cash acquired		0	–11,466
Investments in financial assets		–95,411	–188,478
Disposals of fixed assets		3,924	5,065
Disposal of subsidiaries net of cash disposed		111	1,857
Disposals of investments held for sale		0	68,975
Disposals of financial assets		95,977	39,013
Interest received		1,429	1,394
Total cash used in investing activities		**–149,244**	**–221,746**
Free cash flow		154,832	15,481
Cash flow from financing activities			
Acquisition of minorities		0	–24
Dividends paid		–35,571	–27,091
Proceeds from loans		5,059	7,227
Repayments of loans		–8,333	–9,068
Interest paid		–818	–1,411
Total cash flow from financing activities		**–39,663**	**–30,367**
Effects of exchange rate changes on cash and cash equivalents		**11,706**	**–28,279**
Changes in cash and cash equivalents		**126,875**	**–43,165**
Cash and cash equivalents at beginning of year		411,280	454,445
Cash and cash equivalents at end of year		538,155	411,280

The notes are an integral part of these consolidated financial statements.

Notes to the consolidated financial statements

This financial report is a translation from the original German version. In case of any inconsistency the German version shall prevail.

1. General information

The Endress+Hauser Group (the Group) is a global leader in measurement instrumentation, services and solutions for industrial process engineering.

The parent company of the Group is Endress+Hauser AG (the company), which is a stock company and is incorporated and domiciled in Reinach, Switzerland.

2. Accounting policies

2.1 Accounting standards

The consolidated financial statements of the Endress+Hauser Group are prepared in accordance with International Financial Reporting Standards (IFRS). As the Company is not publicly listed, the Group is not required to publish segment reporting.

The Group has adopted all standards and interpretations applicable as per 31 December 2018. There are no IFRSs, with exception of IFRS 9 and IFRS 15, or IFRIC interpretations that are effective for the first time for the financial year 2018 that have a material impact on the net assets, financial position and earnings performance of the Group.

IFRS 9 'Financial instruments' must be applied since 1 January 2018. The Group has adopted the standard using the modified retrospective approach. The impact on the classification and measurement of financial assets or liabilities is not material. The previous category held to maturity is replaced by amortised cost. The implementation of IFRS 9 did not trigger any movements between financial assets valued at fair value and at amortised cost and therefore did not result into valuation differences. The new impairment model has triggered a reduction of the provisions for impairment of trade accounts receivable of 1.8 million euros and deferred income tax assets of 0.3 million euros, whereas equity has increased by 1.5 million euros.

IFRS 15 'Revenues from contracts with customers' must be applied since 1 January 2018. The Group has adopted the standard using the modified retrospective approach. Endress+Hauser Group is engaged to the largest extent in the transaction based sale of instruments (products), solutions and services. Under IFRS 15 product sales are accounted for in the same manner as under the previous standards. Revenues from the sale of goods are recognized at a point in time. Services are normally invoiced separately and correlate with the services rendered and thus recognized over time. The regular case for solutions projects is that the instruments and services can be treated as separate performance obligations and the revenue is recognized at a point in time. Only as exception the obligation is satisfied over time and the revenue recognized according to the stage of completion. As a consequence the recognition and valuation rules required by IFRS 15 did not have any material impact on the financial statements of the Group and has only triggered a reclassification of 5.1 million euros from inventories (work in progress) to other accounts receivable and to a reduction of equity of 0.5 million euros.

IFRS 16 'Leases' must be applied as of 1 January 2019. The standard causes that the lessee has to recognize almost all leasing contracts on the balance sheet. The differentiation between finance and operating lease arrangements is dropped in future. The Group has elected to apply the modified retrospective approach for the initial adoption using practical expedients. Based on preliminary assessment of the Group the major impact of IFRS 16 will be limited to the "operating lease commitments" presented in note 20. As per 31 December 2018 the Group has non-cancelable operating lease of 69.5 million euros. This amount mainly comprises leases that are not short-term and not of low value. With initial adoption as per 1 January 2019 the majority of these future expenses will be newly recognised as lease liabilities and the rights of use as assets on the balance sheet. The Group does not expect any material impact of the initial adoption on the net income. Under IFRS 16 operating lease expenses will be presented as depreciation and finance costs, whereas under IAS 17 they had been part of other operating expenses. The cash flow from operating activities will increase under IFRS 16, as the leasing payments will be presented as part of investing activities. The Group does not act as lessor and is therefore not impacted by any change regarding lessor accounting.

No major impact is expected from application of other changed or new standards or interpretations valid after 31 December 2018 (IFRS 3, IFRS 9, IAS 1, IAS 8, IAS 12, IAS 19, IAS 23 and IFRIC 23) on the net assets, financial position and earnings performance or cash flow statement. The Group has not early adopted any amendment or new standard or interpretation. The amendments to IFRS 10, IFRS 11, IFRS 17 und IAS 28 are not relevant for the Group.

Certain prior year balances of financial assets have been reclassified to conform with the current year presentation.

On 15 April 2019 the Supervisory Board recommended these consolidated financial statements for approval by the Annual General Meeting.

2.2 Principles and method of consolidation

Subsidiaries Subsidiaries are all companies over which the Group has control. Subsidiaries are fully consolidated from the date on which control is transferred to the Group and deconsolidated from the date that control ceases. Newly acquired companies are accounted for using the acquisition method as at the acquisition date, which is the date on which control is transferred to the Group. The cost of an acquisition is measured at the fair value of the assets and liabilities acquired. Acquisition-related costs are expensed as incurred. Identifiable assets, liabilities and contingent liabilities are measured initially at their fair values at the acquisition date, irrespective of the extent of any minority interest. The excess of the cost of acquisition over the fair value of the Group's share of the identifiable net assets acquired is recorded as goodwill.

The financial statements of the companies included in the consolidation have been prepared using the historical cost convention, with the exception of financial assets and financial liabilities (including derivative instruments), and applying uniform presentation and valuation principles. The financial statements of the subsidiaries and the Company are prepared as of the same reporting date. Financial assets and financial liabilities (including derivative instruments) have been recorded at fair value through profit or loss.

Intercompany liabilities, assets, revenues and expenses within the Group and all intercompany profits are eliminated.

Non-controlling interests of third parties are shown separately in the balance sheet, income statement and statement of comprehensive income.

Associated companies Associates are all entities over which the Group has significant influence but not control. Investments in associated companies and joint ventures are accounted for using the equity method. These investments are initially recognized at cost. When the Group's share of losses in an associated company equals or exceeds its interest in the associated company, the Group does not recognize further losses, unless the Group has incurred obligations or made payments on behalf of the associated company.

Other investments are reported as long-term financial assets.

2.3 Revenue recognition

Sales of goods and services are recognized in line with the requirements of IFRS 15 'Revenues from Contracts with Customers', based on the consideration the Group expects to receive in exchange for the products or services. Revenue from sales of products is recognized in the income statement when control has been transferred to the buyer, which is usually upon delivery, at a fixed price, and when collectability is reasonably assured. Delivery is defined based on the terms of the sale contract. Revenue from services is recognized when the respective services have been rendered. The regular case for solutions projects is that the instruments and services can be treated as separate performance obligations and the revenue is recognized at a point in time. Only as exception the obligation is satisfied over time and the revenue recognized according to the stage of completion. Revenue is reported net of sales taxes, returns, discounts and rebates. Rebates to customers are provided for in the same period that the related sales are recorded based on the contract terms.

Advance payments received on customer contracts are recorded as contract liabilities and presented as part of other short-term liabilities. Liabilities from advance payments are released and revenues associated with such advance payment transactions are recognized upon delivery and transfer of title, ownership, and risk of loss of the related products to the customer. Cash rebates and discounts granted to customers are classified as a reduction of revenue.

Interest income and interest expense is recognized on a time proportion basis. Dividend income is recognized when the right to receive payment is established.

Dividend distributions to the company's shareholders are recorded in the Group's financial statement in the period in which the dividends are approved by the company's shareholders.

2.4 Foreign currency translation

Presentation currency The consolidated financial statements are presented in euros, which is not the functional currency of the Company, but has been selected due to the fact that the majority of the Group's assets, liabilities, revenues and expenses are denominated in this currency.

For the convenience of the reader the consolidated income statement, comprehensive income and balance sheet are also presented in Swiss francs. The calculation is simplified based on consolidated Euro values using the relevant closing and average rates.

Transactions and balances Foreign currency transactions are translated into the presentation currency using the exchange rates prevailing at the dates of the transactions. Foreign exchange gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies are recognised in the income statement.

Group companies The Group subsidiaries present their financial statements in local currency. Conversion of the profit and loss accounts into the Group presentation currency is done at the average annual rates, while the balance sheet is converted at the closing rate at the date of that balance sheet.

All resulting exchange differences are recognized as a separate component of equity.

On consolidation, exchange differences arising from the translation of the net investment in foreign entities are taken to shareholder's equity.

When a foreign entity is sold, exchange differences that were recorded in equity are recognized in the income statement as part of the gain or loss on sale.

Goodwill and fair value adjustments arising from the acquisition of a foreign entity are treated as assets and liabilities of the reporting entity and translated at the closing rate.

Consolidated comprehensive income The comprehensive income comprises results recognized directly in equity. Relevant for the Group are actuarial gains or losses from defined benefit plans and gains or losses from translating the financial statements of foreign subsidiaries as in the consolidated statement of changes in equity. The translation differences result from the difference between historical and closing rates on investments and equity in foreign currencies; there are no related tax effects.

2.5 Tangible fixed assets

Property, plant and equipment is valued at historical acquisition or production costs, less accumulated depreciation calculated on a straight-line basis over the useful life of the asset. Subsequent costs are capitalized when it is probable that future economic benefits associated

Notes to the consolidated financial statements

with the item will flow to the Group. Land is reported at cost.

The estimated useful life to determine straight-line depreciation is as follows:

Land, assets under construction	none
Buildings (light constructions)	10–20 years
Buildings (massive constructions)	25–40 years
Plant, equipment and machinery	7–15 years
Production tools and other equipment	3–7 years
Office equipment and furniture	8–10 years
IT equipment (hardware)	3–5 years
Motor vehicles	4–6 years

Gains or losses on disposals are determined by comparing proceeds with book values and are included in operating profit. Interest costs on borrowings to finance the construction of property, plant and equipment are expensed in the period in which they are incurred if they are not directly attributable.

The property, plant and equipment financed by finance lease agreements are depreciated over the shorter of the duration of the lease agreement, if the transfer of property rights is uncertain, and its duration in use.

2.6 Intangible assets

Goodwill Goodwill on acquisitions of subsidiaries is included in intangible assets. Goodwill is tested annually for impairment and carried at cost less accumulated impairment losses. The calculation of gains and losses on the disposal of an entity is based on the carrying amount of goodwill relating to the entity sold.

Research and development costs Research expenditure is recognized as an expense as incurred. Since the extent and timing of future economic benefits of development projects is difficult to assess, development costs are regularly recognized as expenses as incurred.

Other intangible assets Costs associated with developing or maintaining computer software programmes are recognized as an expense as incurred. Expenditure to acquire patents, trademarks and licences is capitalized. Intangible assets are amortized using the straight-line method over the following useful lives:

Trademarks and licences	3–15 years
Computer software	3–5 years
Other intangibles	3–15 years

2.7 Impairment of non-financial assets

Assets that have an indefinite useful life are not subject to amortization and are tested annually for impairment. Assets that are subject to amortization are reviewed for impairment whenever an indication is given. Where the book value of an asset is greater than its estimated recoverable amount, it is written down immediately to its recoverable amount.

2.8 Financial assets

Financial assets are classified into the following categories: Financial assets at fair value through profit or loss and financial assets at amortised cost.

A financial asset is classified in the category ‘at fair value through profit or loss’ if the criteria for classification ‘at amortised cost’ are not fulfilled. Investments in equity instruments are measured at fair value. The possibility to present subsequent changes in fair value in other comprehensive income is not applied. Investments in debt instruments are classified on the basis of the business model as determined by Group management. The majority of these instruments are held and managed on the basis of fair value considerations and therefore measured at fair value. In the prior financial year, the Group has designated a long-term fixed deposit which is hedged with a cross currency swap as measured at fair value to avoid an accounting mismatch. Derivatives are also measured at fair value through profit or loss. Regular purchase and sales of financial assets are recognized on the trade-date, the date on which the Group commits to purchase or sell the asset. Profits and losses arising from changes in market value are recorded in the net financial result.

2.9 Derivative financial instruments

Derivatives are valued at market value. Changes in the market value are taken to the income statement (see note 27). Hedge accounting is not applied.

2.10 Leasing agreements

Accounting for finance leases by lessee The Group leases certain property, plant and equipment. Leases of property, plant and equipment where the Group has substantially all the risks and rewards of ownership are classified as finance leases. Finance leases are capitalized at the lease’s commencement at the lower of the fair value of the leased property and the present value of the minimum lease payments. Each lease payment is allocated between the liability and finance charges so as to achieve a constant rate on the finance balance outstanding. The corresponding rental obligations, net of finance charges, are included in long-term and short-term liabilities. The interest element of the finance cost is charged to the income statement over the lease period. The property, plant and equipment acquired under finance leases is depreciated over the shorter of the useful life of the asset or the lease term.

Operating leases (lessee) Leases in which a significant portion of the risks and rewards of ownership are retained by the lessor are classified as operating leases. Payments made under operating leases are recognized at the lessee as expenses in the income statement on a straight-line basis over the period of the lease. The majority of the leasing payments is for buildings as well as factory and office equipment.

2.11 Inventories

Inventories are stated at the lower of cost and net realizable value. The cost of purchased inventory is determined using the weighted average cost method. The cost of finished goods and work in progress comprises raw materials, direct labor, other direct costs and related production overheads (based on normal operating capacity) but excludes borrowing costs. Net realizable value is the estimated selling price in the ordinary course of business, less the costs of completion and selling expenses. The value adjustments are calculated on a line-by-line basis using the stock reach criterion and take also slow-moving items and specific cases into consideration.

2.12 Trade accounts receivables, income tax receivables and other receivables

Trade receivables are valuated and recognized in the balance sheet at original invoice amount, which equals their fair value. Provisions for impairment of these receivables have been made for doubtful and overdue debts. The amount of the expected loss is recognized in the income statement within other operating expenses.

2.13 Cash and cash equivalents

Cash and cash equivalents includes cash in hand, deposits held at call with banks and other short-term highly liquid investments with original maturities of three months or less.

2.14 Trade accounts payable and other liabilities

Trade accounts payable represent liabilities for goods and services provided to the Group in the ordinary course of business which are unpaid at the end of the financial year. They are presented as current liabilities unless payment is not due within 12 months after the reporting period.

They are measured at the originally invoiced amount which equals fair value.

2.15 Loans

Loans are initially recognized at fair value, net of transaction costs incurred and are subsequently stated at amortised cost. Any discount, which corresponds to the difference between the proceeds (net of transaction costs) and the redemption amount is amortized over the term of the loan and is recognized in the income statement using the effective interest method. Loans are classified as current liabilities unless the Group has an unconditional right to defer settlement of the liability for at least 12 months after the balance sheet date.

2.16 Provisions

Provisions are recognized when the Group has a present legal or constructive obligation as a result of past events, it is probable that an outflow of resources will be required to settle the obligation, and a reliable estimate of the amount can be made. Provisions are measured at the expected future outflow of resources.

2.17 Current and deferred income tax

Provisions are made for all tax obligations at the balance sheet date, regardless of their payment date.

In addition, provisions are made for deferred taxes at the anticipated local tax rate on the difference between the values in the consolidated balance sheet and the values in the tax balance sheets of the individual companies. Deferred taxes relating to investments in subsidiaries or associated companies are not recognized as the Group can control the timing of the reversal and it is probable that the temporary difference will not reverse in the foreseeable future.

Deferred income tax assets and liabilities are offset when there is a legally enforceable right to set off current tax assets against current tax liabilities and when the deferred income taxes relate to the same fiscal authority.

Tax relevant losses carried forward and temporary differences are capitalized only to the extent that it is likely that sufficient taxable profit will be generated in the future to offset them.

2.18 Employee benefits

The Group operates various post-employment schemes, including both defined benefit and defined contribution pension plans.

Retirement benefit obligations – Defined benefit plans
The liability recognized in the balance sheet in respect of defined benefit pension plans is the present value of the defined benefit obligation at the end of the reporting period less the fair value of plan assets.

The pension obligation under all major defined benefit plans is determined yearly by independent qualified actuaries based on the projected unit credit method.

The present value of the defined benefit obligation is determined by discounting the estimated future cash outflows using interest rates of high-quality corporate bonds. The bonds are denominated in the currency in which the benefits will be paid and have terms to maturity approximating to the terms of the related pension liability of 15 to 20 years.

Actuarial gains and losses arising from changes in actuarial assumptions and experience adjustments are charged or credited to equity in other comprehensive income in the period they arise. Pension costs from defined benefit plans include service cost, interest expense and past service cost of the current period and are shown separately in note 7 (personnel expenses).

Defined contribution plans Defined contribution plans are saving plans which do not include future benefit commitments. The contributions, which the Group is called upon to pay in respect of a particular period, are recorded as personnel expenses in that period and separately shown in note 7.

Termination benefits Termination benefits are payable when employment is terminated by the Group before the normal retirement date, or whenever an employee accepts voluntary redundancy in exchange for these benefits. The Group recognizes termination benefits at the earlier of the following dates: (a) when the Group can no longer withdraw the offer of those benefits; and (b) when the entity recognizes costs for a restructuring that is within the scope of IAS 37 and involves the payment of termination benefits.

Notes to the consolidated financial statements

Profit-sharing and bonus plans The Group recognizes a provision for bonuses and profit-sharing where contractually obliged or where there is a past practice that has created a constructive obligation.

3. Management of financial risks

3.1 Financial and exchange risks

In view of the Group's world-wide activities and locations in a variety of countries, the local entities are actively engaged in managing exchange risks and changes in interest rates. Risk management is concentrated on monitoring and analyzing exchange and interest rate risks, with the aim of limiting their effects on the Group's results. Risk management is ensured by the central treasury of the Group, which acts in accordance with the directives of the Group's corporate management. The risks are assessed mainly by the local Group companies, whereby the Group's treasury is actively supporting the units.

The Group uses derivative financial instruments like forex forward contracts, options or interest rate derivatives to hedge exchange and interest rate risks.

Financial instruments, exposed to foreign exchange risks are primarily trade accounts receivable, cash and cash equivalents, financial assets, loans and trade accounts payable. This comprises transactions with third parties and Group-internal transactions. Relevant net foreign currency exposures exist in CHF and USD. Assuming for the purpose of a sensitivity analysis a change of ± 5% of these currencies against the euro, this would result in a possible change of the net income of ± 7.6 EUR millions (prior year ± 5.6 EUR millions).

As the majority of the loans has fixed interest rates, changes in interest rates have only little impact on the financial result of the Group.

3.2 Credit risks

Credit risk arises from cash and cash equivalents, derivative financial instruments and financial assets, as well as receivables from customers. For banks and financial institutions, only first-class institutions are accepted.

For other business partners, the Group's policy on customer credits specifies that a periodic credit worthiness check is required and performed under the supervision of the controller of the respective Group company. The Group has no significant concentration of credit risks. The maximum exposure is the book value of the receivables.

3.3 Liquidity risks

Group companies maintain a certain amount of cash in order to secure their normal business activities. They can adjust their cash balance by usage or repayment of intercompany loans.

The majority of the cash is managed by Corporate Treasury. The amount of deposits on bank accounts (= operational liquidity) considers the thresholds up to which no negative interest or deposit fee is charged. All amounts above these thresholds is assigned to the strategic liquidity and invested in various investment categories (e.g. shares, bonds). The investment committee decides biannually on the investment policy. Besides the liquid funds the Group can revert to secured credit lines with major international banks. These credit lines can be utilized by the Group or its entities to fund cash loans or trade financing and to secure exchange rate margins.

The forecasted liquidity reserve per 31 December 2019 takes into account the cash used for the planned outsourcing of a major part of the retirement benefit obligation in Germany and is as follows (EUR in millions):

Cash and cash equivalents as at 31 December 2019	450
Short-term financial assets	285
Not used credit lines	17
Total available liquidity reserve	752

Due to the excellent liquidity position no further credit lines have been agreed with banks.

3.4 Capital risk management

The Group wants to stay autonomous and independent and strives for a healthy debt to equity ratio, which should exceed the industry average. The strategic objective is an equity capital ratio (equity in relation to the capital employed) of over 70%.

3.5 Fair value estimation

The following fair value measurement hierarchy levels have been defined for financial instruments carried at fair value:

- Level 1: Quoted prices (unadjusted) in an active market for identical instruments
- Level 2: Valuation based on observable inputs (other than level 1 inputs)
- Level 3: Valuation based on unobservable inputs

For details for the Group's assets and liabilities measured at fair value please refer to notes 14 and 27.

4. Critical accounting estimates and assumptions

When drawing up the consolidated financial statements, the Group makes estimates and takes assumptions concerning the future. The actual values can deviate from the assumptions and estimates. The estimates and assumptions that have a significant risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial year are discussed below.

4.1 Estimated impairment of goodwill

The Group tests annually whether goodwill has suffered any impairment in accordance with the requirements of IAS 36 'Impairment of Assets'. The recoverable amounts of all cash generating units are determined based on value-in-use calculations or as exception based on calculation of the fair value less costs of disposal.

4.2 Estimates for the accounting for employee benefits

IAS 19 'Employee Benefits' requires that certain assumptions are made in order to determine the amount to be recorded for retirement benefit obligations and pension plan assets, in particular for defined benefit plans. These are mainly actuarial assumptions such as expected future salary increases, average life expectancy and discount rates. Substantial changes in the assumed development of any of these variables may significantly change the Group's retirement benefit obligation and pension assets.

5. Non-GAAP measures

By stating its free cash flow in the cash flow statement, the Group is reporting an item that is not defined in IFRS but is being widely used and recognized in the financial sector. This key figure is the total cash flow from operating and from investing activities.

Notes to the consolidated financial statements

6. Net sales by region (all amounts in EUR thousands)

	Notes	2018	2017
Europe		1,123,846	1,047,484
Asia-Pacific		659,713	596,701
Americas		554,720	490,987
Africa / Middle East		116,315	105,781
		2,454,594	**2,240,953**
Net sales by products (all amounts in EUR thousands)			
Process instrumentation and automation		2,253,030	2,040,757
Laboratory instrumentation and automation		116,206	114,229
Sensors		85,358	85,967
		2,454,594	**2,240,953**

7. Personnel expenses (all amounts in EUR thousands)

	Notes	2018	2017
Wages and salaries		785,074	737,842
Social securities		121,093	114,241
Pension costs – defined benefit plan	22	22,875	25,412
Pension costs – defined contribution plan		15,496	15,339
Severance payments		2,106	1,694
Other employee benefit expenses		11,180	12,189
		957,824	**906,717**
Number of employees by region (at balance sheet date)			
Europe		9,700	9,290
Asia-Pacific		2,315	2,162
Americas		1,606	1,530
Africa / Middle East		307	317
		13,928	**13,299**

8. Other operating expenses (all amounts in EUR thousands)

	Notes	2018	2017
Other personnel related costs		87,455	81,219
Customer related costs		97,956	85,681
IT (EDP) related costs		42,202	37,992
Building, equipment, maintenance, office		90,773	88,234
Operating lease expenses		25,868	18,825
Expenses for rights and other services		67,458	63,648
Other operating expenses		14,344	13,818
Non-income taxes		10,538	10,441
Loss from sale of fixed assets		5,020	1,052
		441,614	**400,910**

9. Research and development (all amounts in EUR thousands)

	Notes	2018	2017
Part of total operating expenses is the following expenditure for research and development		**184,223**	**170,722**
As of % of net sales		**7.5%**	**7.6%**

10. Net financial result (all amounts in EUR thousands)

	Notes	2018	2017
Interest expense – loans		–693	–1,259
Interest expense – finance lease		–124	–152
Interest expenses		–817	–1,411
Interest income		1,436	1,408
Interest result		**619**	**–3**
Various foreign exchange gains (+) / losses (–)		–21,741	–182
Foreign exchange gains (+) / losses (–) from derivative financial instruments	27	8,808	–26,639
Net foreign exchange gains / losses		**–12,933**	**–26,821**
Result from financial assets (at fair value)		–3,186	7,432
Result from derivative financial instruments	27	202	–275
Result from financial assets		**–2,984**	**7,157**
Net financial result		**–15,298**	**–19,667**

Notes to the consolidated financial statements

11. Tangible fixed assets 2018 (all amounts in EUR thousands)

	Notes	Land and buildings	Plant equipment and machinery	Factory and office equipment	Advance payments and assets under construction	**2018 total**
Acquisition value **Value as at 1 Jan 2018**		**748,401**	**581,519**	**174,706**	**41,707**	**1,546,333**
Additions		24,977	44,122	23,463	56,734	149,296
Disposals		−31,149	−13,597	−11,768	−195	−56,709
Transfers		8,709	18,692	106	−28,312	−805
Exchange differences		11,238	5,989	382	1,236	18,845
Value as at 31 Dec 2018		**762,176**	**636,725**	**186,889**	**71,170**	**1,656,960**
Accumulated depreciation **Value as at 1 Jan 2018**		**−247,777**	**−384,506**	**−122,441**		**−754,724**
Depreciation		−23,437	−44,741	−19,491		−87,669
Disposals		27,155	12,225	11,334		50,714
Transfers		−241	−752	664		−329
Exchange differences		−4,443	−4,010	−322		−8,775
Value as at 31 Dec 2018		**−248,743**	**−421,784**	**−130,256**		**−800,783**
Net book value as at 1 Jan 2018		**500,624**	**197,013**	**52,265**	**41,707**	**791,609**
Net book value as at 31 Dec 2018		**513,433**	**214,941**	**56,633**	**71,170**	**856,177**
Net book value of finance lease as at 31 Dec 2018 included above		**16,234**	**0**	**3,574**		**19,808**

	2018
Fixed assets pledged as security	1,914
Lease rentals relating to property, plant and equipment included in the income statement	25,868

11. Tangible fixed assets 2017 (all amounts in EUR thousands)

	Notes	Land and buildings	Plant equipment and machinery	Factory and office equipment	Advance payments and assets under construction	**2017 total**
Acquisition value **Value as at 1 Jan 2017**		**709,819**	**538,546**	**167,428**	**96,701**	**1,512,494**
Changes in the scope of consolidation		0	64	22	0	86
Additions		20,995	44,642	17,866	48,870	132,373
Disposals		−2,546	−10,560	−9,655	−1,867	−24,628
Transfers		58,509	32,162	4,845	−97,968	−2,452
Exchange differences		−38,376	−23,335	−5,800	−4,029	−71,540
Value as at 31 Dec 2017		**748,401**	**581,519**	**174,706**	**41,707**	**1,546,333**
Accumulated depreciation **Value as at 1 Jan 2017**		**−239,540**	**−360,091**	**−117,311**		**−716,942**
Depreciation		−23,076	−47,307	−18,300		−88,683
Disposals		1,993	9,489	9,136		20,618
Transfers		−48	−875	45		−878
Exchange differences		12,894	14,278	3,989		31,161
Value as at 31 Dec 2017		**−247,777**	**−384,506**	**−122,441**		**−754,724**
Net book value as at 1 Jan 2017		**470,279**	**178,455**	**50,117**	**96,701**	**795,552**
Net book value as at 31 Dec 2017		**500,624**	**197,013**	**52,265**	**41,707**	**791,609**
Net book value of finance lease as at 31 Dec 2017 included above		**14,778**	**0**	**897**		**15,675**

	2017
Fixed assets pledged as security	3,589
Lease rentals relating to property, plant and equipment included in the income statement	18,825

Notes to the consolidated financial statements

12. Intangible assets 2018 (all amounts in EUR thousands)

	Notes	Goodwill	Concessions, rights and licences	IT software	Other intangible assets	**2018 total**
Acquisition value **Value as at 1 Jan 2018**		**111,920**	**56,197**	**81,618**	**48,483**	**298,218**
Additions		0	543	6,464	2,273	9,280
Disposals		0	–408	–606	–87	–1,101
Transfers		0	269	4,821	–2,283	2,807
Exchange differences		2,221	1,974	734	99	5,028
Value as at 31 Dec 2018		**114,141**	**58,575**	**93,031**	**48,485**	**314,232**
Accumulated amortization **Value as at 1 Jan 2018**		**–17,461**	**–35,003**	**–62,956**	**–21,602**	**–137,022**
Amortization		0	–2,952	–6,248	–5,753	–14,953
Disposals		0	408	548	86	1,042
Transfers		0	909	–2,549	–33	–1,673
Exchange differences		–290	–1,235	–559	47	–2,037
Value as at 31 Dec 2018		**–17,751**	**–37,873**	**–71,764**	**–27,255**	**–154,643**
Net book value as at 1 Jan 2018		**94,459**	**21,194**	**18,662**	**26,881**	**161,196**
Net book value as at 31 Dec 2018		**96,390**	**20,702**	**21,267**	**21,230**	**159,589**

Impairment tests for goodwill Goodwill is allocated to the Group's cash-generating units (CGUs) identified according to reporting entities (group companies or sub-groups). The recoverable amount of a CGU is determined based on value-in-use calculations, in case of Analytik Jena Group based on fair value less costs of disposal. These calculations use pre-tax cash flow projections over a four year period, in average a long-term sales growth rate of 2% for the continous period and a pre-tax discount rate (WACC) of 6.75%. The calculations do not result to any impairment charge.

The goodwill consists of the following:

Group companies or sub-groups	Goodwill in EUR in thousands	Proportion	Goodwill from year	Break-even at a WACC of	Break-even at a long-term sales growth rate of
Group Analytik Jena AG	26,044	27.0%	2013-2014	6.8%	1.9%
SpectraSensors Inc.	16,022	16.6%	2012	7.2%	1.5%
Endress & Hauser Process Automation (UAE) Trading LLC	9,993	10.4%	2014	15.6%	-11.3%
PT. Endress+Hauser Indonesia	7,942	8.2%	2012	16.9%	-13.3%
Endress and Hauser (Arabia) LLC	7,918	8.2%	2012	7.8%	0.8%
Other	28,471	29.6%			

Assuming for the purpose of a sensitivity analysis a long-term sales growth of 1%, this would result in a possible goodwill impairment of 10.1 EUR millions for the Group Analytik Jena AG and of 3.5 EUR millions for SpectraSensors Inc. No additional impairment would be necessary for the further impairment tests performed.

12. Intangible assets 2017 (all amounts in EUR thousands)

	Notes	Goodwill	Concessions, rights and licences	IT software	Other intangible assets	**2017 total**
Acquisition value **Value as at 1 Jan 2017**		**113,524**	**62,117**	**77,961**	**46,122**	**299,724**
Changes in the scope of consolidation		6,801	3,000	7	5,097	14,905
Additions		0	94	4,843	1,354	6,291
Disposals		–137	–3,218	–834	–3,595	–7,784
Transfers		0	11	1,370	1,976	3,357
Exchange differences		–8,268	–5,807	–1,729	–2,471	–18,275
Value as at 31 Dec 2017		**111,920**	**56,197**	**81,618**	**48,483**	**298,218**
Accumulated amortization **Value as at 1 Jan 2017**		**–18,323**	**–37,962**	**–59,204**	**–19,313**	**–134,802**
Amortization		0	–3,417	–5,880	–5,539	–14,836
Disposals		0	3,125	834	2,141	6,100
Transfers		0	–11	–8	–8	–27
Exchange differences		862	3,262	1,302	1,117	6,543
Value as at 31 Dec 2017		**–17,461**	**–35,003**	**–62,956**	**–21,602**	**–137,022**
Net book value as at 1 Jan 2017		**95,201**	**24,155**	**18,757**	**26,809**	**164,922**
Net book value as at 31 Dec 2017		**94,459**	**21,194**	**18,662**	**26,881**	**161,196**

Impairment tests for goodwill Goodwill is allocated to the Group's cash-generating units (CGUs) identified according to reporting entities (group companies or sub-groups). The recoverable amount of a CGU is determined based on value-in-use calculations. These calculations use pre-tax cash flow projections over a four year period, in average a long-term sales growth rate of 2% for the continous period and a pre-tax discount rate (WACC) of 6.5%. The calculations do not result to any impairment charge.

The goodwill consists of the following:

Group companies or sub-groups		Goodwill in EUR in thousands	Proportion	Goodwill from year	Break-even at a WACC of	Break-even at a long-term sales growth rate of
Group Analytik Jena AG		26,044	27.6%	2013-2014	10.8%	–3.4%
SpectraSensors Inc.		15,262	16.2%	2012	6.8%	1.6%
Endress & Hauser Process Automation (UAE) Trading LLC		9,517	10.1%	2014	17.9%	–18.0%
PT. Endress+Hauser Indonesia		8,047	8.5%	2012	16.5%	–13.1%
Endress and Hauser (Arabia) LLC		7,543	8.0%	2012	7.8%	0.4%
Other		28,046	29.6%			

Notes to the consolidated financial statements

13. Investments in associated companies (all amounts in EUR thousands)

	2018	2017
Value as at 1 Jan	**3,760**	**3,331**
Group's share of profit	442	546
Exchange differences	77	–117
Reclassification to fully consolidated subsidiary	–4,279	0
Value as at 31 Dec	**0**	**3,760**

Investments in associates are listed in the scope of consolidation (see also note 33).

Endress+Hauser (Tenaga) Sdn. Bhd., Malaysia is treated as fully consolidated subsidiary as per end of 2018.

The Group's interest in associated companies were as follows:		
– Non-current assets	8	173
– Current assets	73	4,929
– Non-current liabilities	2	169
– Current liabilities	79	1,173
– Net sales	6,261	5,986

14. Financial assets (all amounts in EUR thousands)

	Notes	2018	2017
Long-term financial assets (at fair value)		155,440	149,884
Long-term investments in non-consolidated companies		1,042	282
Long-term loans – third		4,905	4,994
Long-term financial assets (amortised cost)		332	523
Total long-term financial assets		**161,719**	**155,683**
Short-term financial assets (at fair value)		194,552	207,863
Short-term financial assets (amortised cost)		9,535	17,781
Short-term loans – associated companies	30	50	200
Derivative financial instruments – assets	27	10,272	1,070
Total short-term financial assets		**214,409**	**226,914**
Total financial assets		**376,128**	**382,597**
The financial assets (at fair value) are included in the fair value hierarchy levels as follows:	3.5		
Level 1		194,830	207,492
Level 2		164,433	150,391
Level 3		1,001	934
Total financial assets (at fair value)		**360,264**	**358,817**

Long-term financial assets (at fair value) include a long-term fixed deposit which is designated 'at fair value' as it is hedged with a cross currency swap and a real estate fund.
Fair value level 1 mainly contains short-term financial investments (at fair value) like investment funds and bonds with quoted marked prices.
Fair value level 2 mainly contains the above-mentioned long-term financial assets (at fair value) as well as derivative financial instruments.

15. Inventories (all amounts in EUR thousands)

	Notes	2018	2017
Raw materials and supplies		143,428	103,535
Work in progress and semi-finished goods		111,056	90,382
Finished goods and merchandise		103,807	79,189
Advance payments for inventory		1,918	2,707
		360,209	**275,813**
As in the previous year, no inventories were pledged as security for borrowings.			
Change in stock provision based on the stock-reach analysis:			
Value as at 1 Jan		**–44,368**	**–29,951**
Additions (via income statement)		–5,285	–18,353
Amounts used		1,343	1,025
Reversal (via income statement) due to sale of goods		491	1,021
Exchange differences		–449	1,890
Value as at 31 Dec		**–48,268**	**–44,368**

Notes to the consolidated financial statements

16. Trade accounts receivable (all amounts in EUR thousands)

	Notes	2018	2017
Trade accounts receivable – third		460,316	415,823
Trade accounts receivable – associated companies	30	0	379
Total trade accounts receivable – gross		**460,316**	**416,202**
Bad debt valuation allowance		–22,479	–24,582
Total trade accounts receivable		**437,837**	**391,620**
Movements on the provision for impairment of trade receivables:			
Value as at 1 Jan		**–24,582**	**–24,351**
Adjustments for restatement IFRS 9		1,794	0
Provision for receivables impairment		–5,683	–6,155
Utilization of provision for receivables written off		1,312	1,688
Reversal of unused provision		4,733	1,726
Exchange differences		–53	2,510
Value as at 31 Dec		**–22,479**	**–24,582**
At reporting date provisions for doubtful and overdue debts have been made. The aging analysis of the receivables is as follows:			
Aging analysis			
Not due or overdue under 2 months		407,542	372,506
2 to 6 months overdue		22,732	21,255
6 to 12 months overdue		9,324	8,573
Over 12 months overdue		20,718	13,868
Total trade accounts receivable – gross		**460,316**	**416,202**
Trade accounts receivable include amounts denominated in the following major currencies:			
Functional currencies of subsidiaries		399,156	364,126
Euro		36,176	32,791
US dollar		24,545	18,970
Other currencies		439	315
Total trade accounts receivable		**460,316**	**416,202**

17. Other accounts receivable (all amounts in EUR thousands)

	Notes	2018	2017
Other tax receivables		44,654	41,808
Accounts receivable from social benefits institutions		475	1,081
Accounts receivable from employees		1,340	1,519
Other accounts receivable – third		10,366	9,210
Contract assets (IFRS 15)	26	6,905	0
Prepayments and accruals		24,283	24,776
		88,023	**78,394**

Other receivables do not contain impaired assets.

18. Cash and cash equivalents (all amounts in EUR thousands)

	Notes	2018	2017
Cash and cash deposits		467,261	381,295
Short-term interest bearing deposits		70,894	29,985
		538,155	**411,280**

19. Loans (all amounts in EUR thousands)

	Notes	2018	2017
The carrying amounts of loans are as follows:			
Long-term loans – banks		1,682	1,133
Long-term loans – third		286	231
Long-term finance lease liabilities		5,456	4,389
Total long-term loans		**7,424**	**5,753**
Short-term loans – banks		3,668	2,567
Short-term loans – third		23,011	23,497
Short-term finance lease liabilities		1,940	1,211
Total short-term loans		**28,619**	**27,275**
Total loans		**36,043**	**33,028**
Breakdown by maturity			
Under 1 year		28,619	27,275
1 to 5 years		6,828	4,804
Over 5 years		596	949
Total loans		**36,043**	**33,028**

Bank loans are mainly secured by the land and buildings of the Group (see note 11).

All loans are in functional currencies of subsidiaries.

The fair value of the loans equal their carrying amount, as the impact of discounting is not significant.

The reconciliation from gross finance lease liabilities to present values is as follows:			
Finance lease payments under 1 year		2,101	1,342
Finance lease payments 1 to 5 years		5,670	4,177
Finance lease payments over 5 years		127	426
Gross finance lease liabilities		**7,898**	**5,945**
Future interest expense – finance lease		-502	-345
Present value of finance lease liabilities		**7,396**	**5,600**
Short-term finance lease liabilities		1,940	1,211
Long-term finance lease liabilities 1 to 5 years		5,330	3,983
Long-term finance lease liabilities over 5 years		126	406
Present value of finance lease liabilities		**7,396**	**5,600**

Notes to the consolidated financial statements

20. Commitments (all amounts in EUR thousands)

	Notes	2018	2017
Capital expenditure contracted for at the balance sheet date but not recognized in the financial statements is as follows:			
Capital commitments			
Open obligations for the acquisition of tangible fixed assets and intangible assets		25,188	12,033
Leasing commitments not recognized on the balance sheet account for the following:			
Operating leasing commitments by maturity			
Under 1 year		21,055	34,282
1 to 5 years		44,700	64,074
Over 5 years		3,614	6,791
		69,369	**105,147**

21. Income taxes (all amounts in EUR thousands)

	Notes	2018	2017
Income tax expenses			
Current income tax charge		80,337	69,461
Deferred income tax charge (+) / benefit (–)		2,881	–2,952
Total charge for income taxes		**83,218**	**66,509**
Analysis of tax rate			
The income tax expense on the consolidated profit before taxes differs from the expected tax rate (the weighted average of the local tax rates of the Group companies) as follows:			
Average expected tax rate		**23.5%**	**22.5%**
Tax effect of			
– Different tax rates in other countries		0.7%	1.1%
– Changes in tax rates		–0.1%	0.5%
– Additional tax (+) or tax refunds (–) from previous years		0.4%	0.6%
– Income not subject to tax		–1.2%	–3.3%
– Expenses not deductible for tax purposes or reduced rate		2.0%	2.0%
– Current year change in unrecognized tax losses		1.3%	0.8%
– Other items		–0.2%	–0.1%
Effective tax rate		**26.4%**	**24.1%**

21. Income taxes (all amounts in EUR thousands)

	Notes	2018	2017
Changes in deferred taxes (assets and liabilities) recorded in the balance sheet:			
Balance as at 1 Jan		**39,317**	**34,259**
Changes in the scope of consolidation		–164	387
Adjustments for restatement IFRS 9		–329	0
Income statement charge / credit		–2,881	2,952
Tax debited (+) / credited (–) to equity		1,405	–431
Exchange differences		–1,556	2,150
Net balance as at 31 Dec		**35,792**	**39,317**
Tax losses on which no deferred tax was calculated			
Expiry			
Within 5 years		19,603	13,373
Within 6 to 10 years		26,345	14,967
Over 10 years		53,849	63,143
Unrecognized tax losses as at 31 Dec		**99,797**	**91,483**
Source of deferred tax			
Deferred tax assets and liabilities relate to the following items on the consolidated balance sheet:			
Tangible fixed assets		–28,890	–27,045
Intangible assets		4,533	2,796
Capitalized tax losses		4,735	6,250
Inventories		13,995	13,637
Other assets		–7,448	–5,045
Employee benefit liabilities		53,563	51,983
Loans		1,337	765
Other liabilities		–6,033	– 4,024
Net deferred tax balance recognized as at 31 Dec		**35,792**	**39,317**

Notes to the consolidated financial statements

22. Retirement benefit obligations (all amounts in EUR thousands)

	Notes	2018	2017
The defined benefit obligations are composed of as follows:			
Group companies in Germany		282,604	269,301
Group companies in Switzerland		24,760	32,565
Liability in the balance sheet		**307,364**	**301,866**
Defined benefit obligation – Group companies in Germany			
The defined benefit obligation of the Group companies in Germany refer particularly the pension scheme of 1993 and individual obligations to directors and senior staff. The pension scheme provides benefits to employees of the Group in the form of a guaranteed level of pension payable for life, depending on the final salary.			
The obligations are as follows:			
Present value of funded obligations		2,009	2,036
Fair value of plan assets		–703	–703
Deficit		**1,306**	**1,333**
Present value of unfunded obligations		281,298	267,968
Liability in the balance sheet		**282,604**	**269,301**
Movement in the defined benefit obligation			
Value as at 1 Jan		**270,004**	**266,294**
Current service cost		5,558	5,806
Past service cost and gains (–) / losses (+) on settlement		62	0
Interest cost		4,812	4,488
Total defined benefit plan costs, included in personnel expenses	7	**10,432**	**10,294**
Remeasurement resulting from actuarial gains (–) / losses (+) recognized in year from			
Change in financial assumptions		4,639	–2,277
Change in demografic assumptions		3,243	0
Total Remeasurement, included in other comprehensive income		**7,882**	**–2,277**
Benefits paid		–4,630	–4,307
Payments in respect of plan settlement		–382	0
Value as at 31 Dec		**283,306**	**270,004**
Movement in the fair value of the plan assets			
Value as at 1 Jan		**703**	**696**
Interest income		12	12
Total defined benefit plan costs, included in personnel expenses	7	**12**	**12**
Remeasurement: return on plan assets		–6	2
Total remeasurement, included in other comprehensive income		**–6**	**2**
Benefits paid		–6	–7
Value as at 31 Dec		**703**	**703**

Plan assets contain 65% investment funds and 35% pledged liability insurances.

22. Retirement benefit obligations (all amounts in EUR thousands)

	Notes	2018	2017
The significant actuarial assumptions (weighted averages) were as follows:			
Discount rate		1.90%	1.80%
Future salary increase		2.00%	2.00%
Future pension increase		1.75%	1.75%

Sensitivity analysis: Changes in the weighted principal assumptions have the following impact on the defined benefit obligation:		2018	
		Impact on defined benefit obligation	
		Increase in assumption	Decrease in assumption
Discount rate: change in assumption by 0.5%		– 8.5%	+ 10.3%
Future salary increase: change in assumption by 0.5%		+ 2.6%	– 2.0%
Future pension increase: change in assumption by 0.5%		+ 7.2%	– 6.0%
Life expectancy: change in assumption by + 1 year		+ 0.8%	

The weighted average duration of the defined benefit obligation is 17.8 years.

	Notes	2018	2017
Defined benefit obligation – Group companies in Switzerland			
Retirement benefit obligations in Switzerland compound of plans regulated by the Federal Law on Occupational Old-Age, Survivors' and Disability Insurance ('BVG'). The pension plans of the Group are managed by a reputable insurance company and are financed by regular employee and employer contributions. The final pension benefits are dependent on contributions and involve specified minimum guarantees. The obligations are as follows:			
Present value of funded obligations		393,193	360,657
Fair value of plan assets		–368,433	–328,092
Liability in the balance sheet		**24,760**	**32,565**
Movement in the defined benefit obligation			
Value as at 1 Jan		**360,657**	**366,608**
Current service cost		14,954	14,813
Past service cost		–2,797	0
Interest cost		3,302	3,170
Total defined benefit plan costs, included in personnel expenses	7	**15,459**	**17,983**
Remeasurement resulting from actuarial gains (–) / losses (+) recognized in year from			
Change in financial assumptions		–2,032	3,482
Total Remeasurement, included in other comprehensive income		**–2,032**	**3,482**
Contributions by plan participants		23,218	17,900
Benefits paid		–18,813	–13,434
Exchange differences / Transfers		14,704	–31,882
Value as at 31 Dec		**393,193**	**360,657**

Notes to the consolidated financial statements

22. Retirement benefit obligations (all amounts in EUR thousands)

	Notes	2018	2017
Movement in the fair value of the plan assets			
Value as at 1 Jan		**328,092**	**329,953**
Interest income		3,004	2,853
Total defined benefit plan costs, included in personnel expenses	7	**3,004**	**2,853**
Remeasurement: return on plan assets		2,153	3,444
Total remeasurement, included in other comprehensive income		**2,153**	**3,444**
Employee contributions		23,218	17,900
Employer contributions		17,171	16,241
Benefits paid		–18,813	–13,435
Exchange differences / Transfers		13,608	–28,864
Value as at 31 Dec		**368,433**	**328,092**
Assets of the old-age and surviving dependants' pensions correspond to the present value of the related obligations as follows:		48,992	43,732
The difference to assets from insurance contracts is:		3,864	5,385
Plan assets contain 7% securities with quoted marked prices and 93% investments without quoted market price (insurance contracts, loans, real estate).			
The significant actuarial assumptions (weighted averages) were as follows:			
Discount rate		1.00%	0.90%
Future salary increase		1.00%	1.00%
Future pension increase		0.00%	0.00%

Sensitivity analysis: Changes in the weighted principal assumptions have the following impact on the defined benefit obligation:		2018	
		Impact on defined benefit obligation	
		Increase in assumption	Decrease in assumption
Discount rate: change in assumption by 0.5%		– 7.7%	+ 8.9%
Future salary increase: change in assumption by 0.5%		+ 0.4%	– 0.7%
Life expectancy: change in assumption by 1 year		+ 2.0%	– 2.0%

The weighted average duration of the defined benefit obligation is 16.7 years.

23. Provisions (all amounts in EUR thousands)

	Other employee benefit liabilities	Warranty provisions	Provisions for legal claims	Other provisions	2018 Total	2017 Total
Long-term provisions Value as at 1 Jan	**31,109**	**527**	**0**	**1,530**	**33,166**	**35,906**
Additions (via income statement)	4,961	315	150	35	5,461	5,418
Amounts used	−1,899	−9	0	−93	−2,001	−2,084
Amounts released (via income statement)	−1,911	−142	−32	−7	−2,092	−467
Transfers	−22	0	0	0	−22	−4,300
Exchange differences	450	0	0	13	463	−1,307
Value as at 31 Dec	**32,688**	**691**	**118**	**1,478**	**34,975**	**33,166**
Short-term provisions Value as at 1 Jan	**84,325**	**20,926**	**0**	**10,458**	**115,709**	**76,086**
Changes in the scope of consolidation	0	0	0	0	0	320
Additions (via income statement)	67,055	2,498	1,627	3,839	75,019	80,910
Amounts used	−54,871	−1,216	0	−3,864	−59,951	−36,939
Amounts released (via income statement)	−1,423	−3,647	0	−1,729	−6,799	−4,190
Transfers	0	0	0	22	22	4,300
Exchange differences	1,229	197	0	54	1,480	−4,778
Value as at 31 Dec	**96,315**	**18,758**	**1,627**	**8,780**	**125,480**	**115,709**
Total provisions Value as at 31 Dec	**129,003**	**19,449**	**1,745**	**10,258**	**160,455**	**148,875**

Other employee benefit liabilities Other long-term employee benefit liabilities include liabilities from contribution plans and provisions for jubilee/anniversary benefits. Short-term employee benefit liabilities mainly refer to holiday, vacation and flexible work time balances of employees, liabilities from management bonuses and severance payments.

Warranty provisions The Group offers warranties on certain products and repairs or replaces those products which do not work to satisfaction. The provision set up at the end of the year to cover future warranty costs is based on historic experience with respect to the volume of repairs and returns.

Provisions for legal claims The amounts shown include provisions for some legal proceedings instituted against the Group. It is the Supervisory Board's and Executive Board's opinion, which is backed up by the appropriate legal advice, that these proceedings will not result in any significant loss beyond the amounts set aside at year end.

Other provisions Other provisions correspond to various commitments to third parties, as entered into by the companies of the Group. These relate to commitments where the expiry date and amount are not definitively specified.

Notes to the consolidated financial statements

24. Trade accounts and notes payable (all amounts in EUR thousands)

	Notes	2018	2017
Trade accounts payable – third		112,076	98,494
Trade accounts payable – associated companies	30	0	4
Short-term notes payable – third		903	650
		112,979	**99,148**

25. Other liabilities (all amounts in EUR thousands)

	Notes	2018	2017
Other long-term liabilities – third		4,816	6,686
Total other long-term liabilities		**4,816**	**6,686**
Other tax liabilities		26,844	26,684
Accounts payable to social benefits institutions		12,224	10,175
Accounts payable to employees		18,684	17,027
Other accounts payable – third		9,681	8,401
Other accounts payable – associated companies	30	0	1,975
Derivative financial instruments – liabilities	27	439	3,202
Advance payments received	26	45,974	30,191
Accrued revenues from customer contracts (IFRS 15)	26	1,490	0
Accruals and deferrals		30,819	26,814
Total other short-term liabilities		**146,155**	**124,469**
Total other liabilities		**150,971**	**131,155**

26. Balances from customer contracts (all amounts in EUR thousands)

Trade accounts receivable are outlined in note 16. Contract liabilities are composed of accrued revenue from customer contracts and advance payments received, see note 25.

	Notes	2018	
The development of contract assets and contract liabilities is as follows:		**Contract assets**	**Contract liabilities**
Value as at 1 Jan		**5,131**	**28,437**
Excess of performance over payments received		2,790	
Cumulative catch-up adjustments		–46	
Transfer to trade accounts receivable		–1,072	
Excess of payments received over performance			24,607
Revenue recognized from contract liabilities			–5,392
Advance payment overdue			9
Exchange differences		102	–197
Value as at 31 Dec		**6,905**	**47,464**

27. Derivative financial instruments (all amounts in EUR thousands)

Derivative financial instruments held at year end are used primarily to hedge currency and interest rate risks for the Group. Contracts are concluded only with first-class institutions.

	Notes	2018	2017
Trading derivatives are classified as a current asset or liability:			
Derivative financial instruments – assets	14	10,272	1,070
Derivative financial instruments – liabilities	25	–439	–3,202
		9,833	**–2,132**
The assignment to fair value hierarchy levels of trading derivatives is as follows:	3.5		
Level 1		212	–535
Level 2		9,621	–1,597
		9,833	**–2,132**
Gain (or loss) recognized			
Foreign currency derivatives	10	8,808	–26,639
Interest rate derivatives	10	202	–275
		9,010	**–26,914**

	31 Dec 2018		31 Dec 2017	
The notional principal amounts and fair values of the foreign currency and interest rate derivatives are composed as follows:	Notional principal amount	Fair value	Notional principal amount	Fair value
Foreign currency derivatives	723,785	5,561	662,666	–2,651
Interest rate derivatives	111,212	4,272	114,779	519
Total	**834,997**	**9,833**	**777,445**	**–2,132**

Notes to the consolidated financial statements

28. Contingent liabilities (all amounts in EUR thousands)

	Notes	2018	2017
In the ordinary course of business the contingent liabilities of the Group arise from:			
Guarantees to third parties		12,100	0

29. Acquisitions of subsidiaries (all amounts in EUR thousands)

No companies have been purchased during 2018.

30. Related party transactions (all amounts in EUR thousands)

Details to associates including proportion of ownership and consolidation method are given in the scope of consolidation (see note 33).

	Notes	2018	2017
Transactions			
Sales of goods and services to associated companies		1,216	2,114

As in the previous year, no major business transactions were effected with further closely associated individuals.

Key management compensation			
Salaries and other short-term employee benefits		5,066	4,869
Receivables or liabilities			
Receivables from associated companies	14, 16	50	579
Liabilities to associated companies	24, 25	0	1,979

31. Exchange rates

The main exchange rates used are:	Average rate		Closing rate	
To EUR	**2018**	**2017**	**31 Dec 2018**	**31 Dec 2017**
1 CHF	0.86929	0.89584	0.88834	0.85443
1 CNY	0.12811	0.13042	0.12696	0.12785
1 GBP	1.12886	1.14265	1.11282	1.12509
1 JPY	0.00770	0.00785	0.00796	0.00739
1 USD	0.84875	0.87803	0.87330	0.83186
To CHF				
1 CNY	0.14738	0.14558	0.14292	0.14963
1 EUR	1.15037	1.11627	1.12569	1.17037
1 GBP	1.29861	1.27550	1.25269	1.31677
1 JPY	0.00886	0.00876	0.00896	0.00865
1 USD	0.97638	0.98012	0.98307	0.97359

32. Post balance sheet events

The management is not aware of any significant post-closing events that would justify an adjustment to the financial statements at the time of finalizing this report.

Notes to the consolidated financial statements

33. Endress+Hauser Group – Scope of consolidation as at 31 Dec 2018

	Company name, registered office	Field of activity	Share	Conso-lidation
Europe				
Switzerland	Endress+Hauser AG, Reinach	Holding	100%	Full
	Endress+Hauser Beteiligungs AG, Reinach	Support	100%	Full
	Endress+Hauser Consult AG, Reinach	Support	100%	Full
	Endress+Hauser Finanz AG, Reinach	Finance	100%	Full
	Endress+Hauser Flowtec AG, Reinach	Production	100%	Full
	Endress+Hauser Instruments International AG, Reinach	Sales	100%	Full
	Endress+Hauser (International) Holding AG, Reinach	Holding	100%	Full
	Endress+Hauser Management AG, Reinach	Support	100%	Full
	Endress+Hauser Process Solutions AG, Reinach	Engineering/development	100%	Full
	Endress+Hauser (Schweiz) AG, Reinach	Sales	100%	Full
	Endress+Hauser Services AG, Reinach	Support	100%	Full
	Endress+Hauser Sternenhof AG, Reinach	Support	100%	Full
	Innovative Sensor Technology IST AG, Ebnat-Kappel	Production	100%	Full
	Mestra AG, Reinach	Support	100%	Full
	TrueDyne Sensors AG, Reinach	Production	100%	Full
Austria	Endress+Hauser Ges.m.b.H., Wien	Sales	100%	Full
Belgium	Endress+Hauser S.A.-N.V., Bruxelles	Sales	100%	Full
Croatia	Endress+Hauser d.o.o., Zagreb	Sales	100%	Full
Czech Republic	Endress+Hauser (Czech) s.r.o., Praha	Sales	100%	Full
	Innovative Sensor Technology s.r.o., Roznov	Production	100%	Full
Denmark	Endress+Hauser A/S, Søborg	Sales	100%	Full
Finland	Endress+Hauser Oy, Helsinki	Sales	100%	Full
France	Analytik Jena France SARL, Saint-Aubin	Sales	100%	Full
	Endress+Hauser S.A.S., Huningue	Sales	100%	Full
	Kaiser Optical Systems SARL, Saint-Priest	Sales	100%	Full
	Société Générale de Métrologie S.A.S., Vitrolles	Sales	100%	Full
Germany	AJ Innuscreen GmbH, Berlin	Production	100%	Full
	AJ Roboscreen GmbH, Leipzig	Production	100%	Full
	Analytik Jena AG, Jena	Production	100%	Full
	Biometra GmbH, Göttingen	Production	100%	Full
	Blue Ocean Nova GmbH, Gerlingen	Production	100%	Full
	CodeWrights GmbH, Karlsruhe	Development	66.7%	Full
	Endress+Hauser Administration SE, Maulburg	Holding	100%	Full
	Endress+Hauser Conducta GmbH+Co. KG, Gerlingen	Production	100%	Full
	Endress+Hauser Conducta Verwaltungs-GmbH, Gerlingen	Holding	100%	Full
	Endress+Hauser (Deutschland) AG+Co. KG, Weil	Holding	100%	Full
	Endress+Hauser InfoServe GmbH+Co. KG, Weil	Support	100%	Full
	Endress+Hauser InfoServe Verwaltungs-GmbH, Weil	Holding	100%	Full
	Endress+Hauser Logistik GmbH+Co. KG, Weil	Support	100%	Full
	Endress+Hauser Messtechnik GmbH+Co. KG, Weil	Sales	100%	Full
	Endress+Hauser Messtechnik Verwaltungs-GmbH, Weil	Holding	100%	Full
	Endress+Hauser Process Solutions (Deutschland) GmbH, Freiburg	Engineering/development	100%	Full
	Endress+Hauser SE+Co. KG, Maulburg	Production	100%	Full
	Endress+Hauser Systemplan GmbH, Durmersheim	Support	100%	Full

33. Endress+Hauser Group – Scope of consolidation as at 31 Dec 2018

	Company name, registered office	Field of activity	Share	Consolidation
Europe				
Germany	Endress+Hauser Verwaltungs-GmbH, Maulburg	Holding	100%	Full
	Endress+Hauser Wetzer GmbH+Co. KG, Nesselwang	Production	100%	Full
	Endress+Hauser Wetzer Verwaltungs-GmbH, Nesselwang	Holding	100%	Full
	ETG Entwicklungs- und Technologie Gesellschaft-mbH Ilmenau	Production	80%	Full
	IMKO Micromodultechnik GmbH, Ettlingen	Production	100%	Full
	Jobst Technologies GmbH, Freiburg i.Br.	Development	60%	Full
	Process+Lab Devices Online GmbH, Berlin	Sales	100%	Full
	SensAction AG, Coburg	Production	100%	Full
Greece	Endress+Hauser (Hellas) S.A., Marousi, Athens	Sales	100%	Full
Hungary	Endress+Hauser (Hungary) Magyarország Kft., Budapest	Sales	100%	Full
Ireland	CompuCal Calibration Solutions Ltd., Little Island (Cork)	Engineering/development	44.9%	At equity
	Endress+Hauser (Ireland) Ltd., Kill, Dublin	Sales	100%	Full
Italy	Endress+Hauser Italia S.p.a., Cernusco s/Naviglio	Sales	100%	Full
	Endress+Hauser Sicestherm S.r.L., Pessano	Production	100%	Full
Lithuania	Endress+Hauser (Baltic) UAB, Kaunas	Sales	100%	Full
Netherlands	Endress+Hauser BV, Naarden	Sales	100%	Full
	Endress+Hauser (Netherlands) Holding BV, Naarden	Holding	100%	Full
Norway	Endress+Hauser AS, Lierskogen	Sales	100%	Full
Poland	Endress+Hauser Polska Sp.z.o.o., Wroclaw	Sales	100%	Full
Portugal	Endress+Hauser Portugal S.A., Palmela	Sales	100%	Full
Romania	Analytik Jena Romania srl., Bucharest	Sales	70%	Full
	Endress+Hauser Romania SRL, Bucharest	Sales	100%	Full
Russia	LLC Endress+Hauser, Moscow	Sales	100%	Full
Slovenia	Endress+Hauser d.o.o. Slovenija, Ljubljana	Sales	100%	Full
Spain	Endress+Hauser S.A., Sant Cugat del Vallès	Sales	100%	Full
Sweden	Endress+Hauser AB, Solna	Sales	100%	Full
Turkey	Endress Hauser A.Ş., Istanbul	Sales	100%	Full
United Kingdom	CyBio Northern Europe Ltd., Maidstone	Sales	100%	Full
	Endress+Hauser Investments Ltd., Manchester	Holding	100%	Full
	Endress+Hauser Ltd., Manchester	Sales	100%	Full
	MHT Technology Ltd., Richmond	Production	100%	Full
	Ultra-Violet Products Ltd., Cambridge	Sales	100%	Full
	Whessoe Ltd., Newton Aycliffe	Holding	100%	Full
Americas				
Argentina	Endress+Hauser Argentina S.A., Buenos Aires	Sales	100%	Full
Brazil	Endress+Hauser (Brasil) Instrumentação e Automação Ltda., Itatiba	Production	100%	Full
	Endress+Hauser Controle e Automação Ltda., São Paulo	Sales	100%	Full
	Endress+Hauser Flowtec (Brasil) Fluxômetros Ltda., Itatiba	Production	100%	Full
Canada	Endress+Hauser (Canada) Ltd., Burlington	Sales	100%	Full
Chile	Endress+Hauser (Chile) Ltda., Santiago de Chile	Sales	100%	Full
Colombia	Endress+Hauser (Colombia) S A S, Bogotá	Sales	100%	Full

Notes to the consolidated financial statements

33. Endress+Hauser Group – Scope of consolidation as at 31 Dec 2018

	Company name, registered office	Field of activity	Share	Conso-lidation
Americas				
Mexico	Endress+Hauser (México) S.A. de C.V., Tlanepantla de Baz	Sales	100%	Full
United States	Analytik Jena US LLC, Upland (California)	Production	100%	Full
	Blue Ocean Nova LLC, New York	Sales	100%	Full
	Endress+Hauser Conducta Inc., Anaheim (California)	Production	100%	Full
	Endress+Hauser DISC Inc., Greenwood (Indiana)	Sales	100%	Full
	Endress+Hauser Inc., Greenwood (Indiana)	Sales	100%	Full
	Endress+Hauser InfoServe Inc., Greenwood (Indiana)	Support	100%	Full
	Endress+Hauser (USA) Automation Instrumentation Inc., Greenwood (Indiana)	Production	100%	Full
	Endress+Hauser (USA) Holding Inc., Greenwood (Indiana)	Holding	100%	Full
	Endress+Hauser Wetzer (USA), Inc., Greenwood (Indiana)	Production	100%	Full
	Innovative Sensor Technology USA Division, Las Vegas (Nevada)	Sales	100%	Full
	Kaiser Optical Systems Inc., Ann Arbor (Michigan)	Production	100%	Full
	SpectraSensors Inc., Houston (Texas)	Production	100%	Full
Asia-Pacific				
Australia	Endress & Hauser Australia Pty Ltd., North Ryde NSW	Sales	100%	Full
China	Analytik Jena Instruments (Beijing) Co. Ltd., Beijing	Sales	100%	Full
	Analytik Jena Shanghai Instruments Ltd. Co., Shanghai	Sales	100%	Full
	Endress+Hauser Analytical Instruments (Suzhou) Co. Ltd., Suzhou	Production	100%	Full
	Endress+Hauser (China) Automation Co. Ltd., Shanghai	Sales	100%	Full
	Endress+Hauser Flowtec (China) Co. Ltd., Suzhou	Production	100%	Full
	Endress+Hauser InfoServe (Shanghai) Co. Ltd., Shanghai	Support	100%	Full
	Endress+Hauser Shanghai International Trading Co. Ltd., Shanghai	Sales	100%	Full
	Endress+Hauser (Suzhou) Automation Instrumentation Co. Ltd., Suzhou	Production	100%	Full
	Endress+Hauser Wetzer (Suzhou) Co. Ltd., Suzhou	Production	100%	Full
Hong Kong	Analytik Jena (Hong Kong) Ltd., Hong Kong	Sales	90%	Full
	Endress+Hauser (HK) Ltd., Hong Kong	Sales	100%	Full
India	AJ Instruments India Pvt. Ltd., Delhi	Sales	99.4%	Full
	Endress+Hauser Flowtec (India) Pvt. Ltd., Aurangabad	Production	100%	Full
	Endress+Hauser (India) Automation Instrumentation Pvt. Ltd., Aurangabad	Production	100%	Full
	Endress+Hauser (India) Pvt. Ltd., Mumbai	Sales	100%	Full
	Endress+Hauser InfoServe (India) Pvt. Ltd., Aurangabad	Support	100%	Full
	Endress+Hauser Wetzer (India) Pvt. Ltd., Aurangabad	Production	100%	Full
Indonesia	PT. Endress+Hauser Indonesia, Jakarta	Sales	100%	Full
Japan	Analytik Jena Japan Co., Ltd., Yokohama	Sales	100%	Full
	Endress+Hauser Japan Co. Ltd., Tokyo	Sales	100%	Full
	Endress+Hauser Yamanashi Co. Ltd., Yamanashi	Production	100%	Full
Malaysia	Endress+Hauser (M) Sdn. Bhd., Shah Alam Selangor	Sales	100%	Full
	Endress+Hauser (Tenaga) Sdn. Bhd., Shah Alam Selangor	Sales	30%	Full
Singapore	Endress+Hauser (S.E.A.) Pte. Ltd., Singapore	Sales	100%	Full
South Korea	Analytik Jena Korea Ltd., Seoul	Sales	100%	Full
	Endress+Hauser (Korea) Co. Ltd., Seoul	Sales	100%	Full

33. Endress+Hauser Group – Scope of consolidation as at 31 Dec 2018

	Company name, registered office	Field of activity	Share	Consolidation
Asia-Pacific				
Thailand	Analytik Jena Far East (Thailand) Ltd., Bangkok	Sales	49%	Full
	Endress+Hauser (Thailand) Ltd., Nonthaburi	Sales	100%	Full
Vietnam	Endress+Hauser (Vietnam) LLC, Ho Chi Minh City	Sales	100%	Full
Africa / Middle East				
Algeria	Endress+Hauser Algérie SARL, Algier	Sales	49%	Full
Qatar	Endress+Hauser (Qatar) L.L.C., Doha	Sales	49%	Full
Saudi Arabia	Endress and Hauser (Arabia) LLC, Al-Khobar	Sales	51%	Full
South Africa	Endress+Hauser Investments (Pty.) Ltd., Sandton	Support	100%	Full
	Endress+Hauser (Pty.) Ltd., Sandton	Sales	66.7%	Full
	Endress+Hauser Pyrotemp Services (Pty.) Ltd., Benoni	Production	100%	Full
United Arab Emirates	Endress & Hauser Process Automation (UAE) Trading LLC, Dubai	Sales	49%	Full

Change in scope of consolidation The scope of consolidation includes 134 companies in total in 48 countries, 15 of them registered in Switzerland and 119 abroad.

The following changes in the scope of consolidation were effective in 2018: As per 15 January 2018, Endress+Hauser Administration SE has been incorporated. The company replaces Endress+Hauser Verwaltungs-GmbH as general partner of the production center in Maulburg which has been renamed to Endress+Hauser SE+Co. KG. Endress+Hauser (Vietnam) LLC, Ho Chi Minh City as been incorporated in Vietnam.

In Germany AJ Vorratsgesellschaft mbH and comicon GmbH have been deregistered by end of 2018. Within the United States, Analytik Jena US Inc., Beverly (Massachusetts) has been merged with Analytik Jena US LLC, Upland (California) as per 1 January 2018. In Australia, Open Field Communications Pty. Ltd. has filed for insolvency as per 27 July 2018. Due to loss of control the company has been deconsolidated.

pwc

Report of the statutory auditor

to the General Meeting of Endress+Hauser AG

Reinach

Report on the audit of the consolidated financial statements

Opinion

We have audited the consolidated financial statements of Endress+Hauser AG and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at 31 December 2018 and the consolidated income statement, consolidated statement of comprehensive income, consolidated statement of changes in equity and consolidated statement of cash flows for the year then ended, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In our opinion, the consolidated financial statements (pages 22 to 57) give a true and fair view of the consolidated financial position of the Group as at 31 December 2018 and its consolidated financial performance and its consolidated cash flows for the year then ended in accordance with the International Financial Reporting Standards (IFRS) and comply with Swiss law.

Basis for opinion

We conducted our audit in accordance with Swiss law, International Standards on Auditing (ISAs) and Swiss Auditing Standards. Our responsibilities under those provisions and standards are further described in the "Auditor's responsibilities for the audit of the consolidated financial statements" section of our report.

We are independent of the Group in accordance with the provisions of Swiss law and the requirements of the Swiss audit profession, as well as the IESBA Code of Ethics for Professional Accountants, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Other information in the annual report

The Board of Directors is responsible for the other information in the annual report. The other information comprises all information included in the annual report, but does not include the consolidated financial statements and our auditor's report thereon.

Our opinion on the consolidated financial statements does not cover the other information in the annual report and we do not express any form of assurance conclusion thereon.

In connection with our audit of the consolidated financial statements, our responsibility is to read the other information in the annual report and, in doing so, consider whether the other information is materially inconsistent with the consolidated financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Board of Directors for the consolidated financial statements

The Board of Directors is responsible for the preparation of the consolidated financial statements that give a true and fair view in accordance with IFRS and the provisions of Swiss law, and for such internal control as the Board of Directors determines is necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error.

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PricewaterhouseCoopers AG is a member of the global PricewaterhouseCoopers network of firms, each of which is a separate and independent legal entity.

In preparing the consolidated financial statements, the Board of Directors is responsible for assessing the Group's ability to continue as a going concern, disclosing, as applicable, matters related to going concern and using the going concern basis of accounting unless the Board of Directors either intends to liquidate the Group or to cease operations, or has no realistic alternative but to do so.

Auditor's responsibilities for the audit of the consolidated financial statements

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Swiss law, ISAs and Swiss Auditing Standards will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements.

A further description of our responsibilities for the audit of the consolidated financial statements is located at the website of EXPERTsuisse: http://expertsuisse.ch/en/audit-report-for-public-companies. This description forms part of our auditor's report.

Report on other legal and regulatory requirements

In accordance with article 728a paragraph 1 item 3 CO and Swiss Auditing Standard 890, we confirm that an internal control system exists which has been designed for the preparation of consolidated financial statements according to the instructions of the Board of Directors.

We recommend that the consolidated financial statements submitted to you be approved.

PricewaterhouseCoopers AG

Gerd Tritschler
Audit expert
Auditor in charge

Korbinian Petzi
Audit expert

Basel, 15 April 2019

Endress+Hauser Group Sustainability Report

The idea of sustainability is deeply rooted in the culture of our family business. Our goal is therefore to combine economic success with ecological and social responsibility. The sustainability report, which we are now presenting for the fifth time, is intended to help us make further progress along this path.

Responsibility at Endress+Hauser

Sustainability concept We view sustainability as a holistic concept encompassing an economic, social and ecological dimension. All three dimensions are closely linked and dependent on each other. Only when we are able to fulfill our social and ecological responsibilities can we achieve long-term economic success. On the other hand, only economically successful companies can exercise their responsibility in regard to environment and society.

The sense of sustainability is deeply rooted in our family company. The Spirit of Endress+Hauser, which translates our corporate culture into words, explicitly identifies comprehensive responsibility as one of our central values. We strive to develop trustful and loyal relationships with customers, employees and shareholders and maintain an open and constructive dialogue with these stakeholders. For us, acting responsibly as a corporation also means being environmentally aware and conserving natural resources.

Sustainability reporting In 2014 we laid the groundwork for comprehensive Group-wide sustainability reporting. Beforehand we defined those issues that are most important to us, analyzed their significance to the company and various stakeholders and ascertained to what extent these issues can be influenced by us. The materiality matrix that grew out of this effort helped us develop suitable key indicators related to our sustainability.

In recent years, we have created corresponding internal structures and processes to capture the defined key indicators on a Group-wide basis. Trailblazers in this area are our production centers, which are required to provide the relevant data for environmental and sustainability audits. Three years ago, we also began collecting and documenting sustainability indicators in our sales centers, which we have now evaluated for the first time and incorporated into our sustainability reporting.

The report covers the fiscal year 2018. The data corresponds to the year-end figures and includes key indicators from all Endress+Hauser production facilities, our support and sales centers around the world and the Analytik Jena subsidiary. So far, the environmental performance of three smaller production companies has not been recorded.

Strategic sustainability indicator Since 2015, we have also measured our success by the result of the annual sustainability audit by EcoVadis. EcoVadis operates a global platform to evaluate suppliers in accordance with ecological, social and ethical criteria. The results also highlight areas where there is room for improvement. More than 50,000 companies around the globe use EcoVadis to reduce risks, create transparency and build trust.

Our goal is to rank among the top 25 percent of the companies evaluated. In 2018 Endress+Hauser was able to further improve its performance in the EcoVadis audit and again achieved gold status with 68 out of 100 points (2017: 66 points). The audit examined 21 criteria in the areas of environmental protection, work conditions, business practices and procurement. Endress+Hauser scored above-average in all areas to make it to the top 5 percent of all companies that were evaluated.

Sustainability strategy and sustainable management

Corporate strategy According to our corporate mission, about 14,000 employees globally support our customers to improve their products and manufacture them more efficiently. Our goal is to further expand our position as a leading provider of products, solutions and services for process and laboratory automation. How we intend to achieve this goal is outlined in our Strategy 2020+.

We established a set of ambitious goals under the framework of this strategy, the core of which is formed by seven strategic focal points: promote the further development of our employees, strengthen our international network, deepen the industry focus, align our portfolio more precisely, improve our order and delivery chain, handle risks in a responsible manner and expand our digital expertise.

For laboratory analysis, our subsidiary Analytik Jena AG revised its own business strategy in close cooperation with the Group management. It plans to expand and strengthen the product portfolio and to address the markets and customers more broadly.

Shareholder structure As the shareholder family states in its Family Charter, Endress+Hauser shall remain a family company. The goal of the Family Charter, created in 2004, is to strengthen solidarity within the family over the long term and consistently keep family issues away from the company. Various institutions foster the family members' relationships with the company and introduce in particular the younger generation to the company.

A Family Council makes important decisions regarding the relationship between the family and the company. As shareholders, the family exercises influence over the company at the Annual General Meeting. In addition, two members of the Endress family currently sit on the Group's Supervisory Board – Klaus Endress as President and Hans-Peter Endress as a member of the board.

In the period under review, the Endress family worked on a new version of the Family Charter. In future, family members should be able to work at all levels of the company and no longer just as managing directors of a Group company or the Group's CEO. The aim is to strengthen the link between the family and the company by increasing the number of family members working with Endress+Hauser.

Management and corporate governance The Endress+Hauser Group comprises a network of legally independent companies managed and coordinated by Endress+Hauser AG. Management is in the hands of the Executive Board of Endress+Hauser AG, chaired by the CEO. Business and organizational regulations define the responsibilities and roles of the Executive Board and the independent Supervisory Board.

The Supervisory Board as a supervisory and advisory body is granted an important role in corporate governance. Its task is to oversee the work of the Executive Board by providing constructive feedback. Fundamental and far-reaching decisions are taken with the approval of the Supervisory Board.

We apply the 'four-eye' principle across the entire Endress+Hauser Group. That means two or more employees participate

The human factor: Committed and competent employees drive Endress+Hauser's success.

in each business process or that the results of a process are examined by a second employee. This rule also applies to the members of the Executive Board.

Corporate culture The Endress+Hauser Group corporate culture is still heavily influenced by the shareholder family and their representatives in the company. The Spirit of Endress+Hauser explains in written form what distinguishes this culture and establishes important values and principles.

Without specifically referencing the principle of sustainability, the Spirit of Endress+Hauser relies on numerous aspects of sustainable corporate management. Key elements of the corporate culture include comprehensive responsibility for the company, a commitment to ethical behavior and a management principle that deemphasizes profit maximization. The Spirit of Endress+Hauser furthermore contains statements regarding customer relationships, the employees, a culture of quality and communications.

Ethical behavior The Endress+Hauser Code of Conduct provides a binding, Group-wide guideline for dealing with customers, coworkers, partners and suppliers. It encompasses guidance on products and services, personal integrity, corporate integrity, personnel policies, company assets and corporate responsibility.

All employees are obligated to be familiar with the Code of Conduct in accordance with their tasks and responsibilities. The main content is conveyed via an interactive training module that comes in the style of a video game. Endress+Hauser was recognized in 2017 for its forward-looking training program by research and consulting firm Brandon Hall Group.

From our suppliers we expect the same level of sound ethical behavior and to adhere to ethical and social principles. They must undertake to comply with the Code of Conduct of the German Electrical and Electronic Manufacturers' Association (ZVEI). We verify the compliance by means of regular on-site audits. A pilot project is currently underway to have our suppliers evaluated according to globally uniform criteria using the EcoVadis platform.

Economic sustainability

Business approach We concentrate only on businesses we understand and which are a good fit for us. This is the foundation of our sustainability-aligned business approach. Our portfolio is based on our core expertise in process and laboratory automation.

To us, profit is not the goal, but the result of good management. The vast majority of our earnings are reinvested in the company to develop better products, open up new markets, purchase more efficient plants, construct modern

buildings, promote our employees, train young people and support the Group's social engagement.

With an equity ratio of 71.0 percent, a cash flow from operating activities of 304.1 million euros and cash and cash equivalents of 538.2 million euros (2018 fiscal year figures), we are well positioned to make the investments needed to ensure a solid and successful future, without relying on external sources, and to grow our Group from within. This ensures the independence and autonomy of Endress+Hauser.

We serve customers in various industries and have sales and production centers around the world. Our largest key accounts represent less than 1.5 percent of our net sales. This minimizes the impact of individual customers, economic cycles, regional or sectoral business developments, currency fluctuations, political crises or natural disasters.

Our understanding of responsible corporate management includes fair wages and working conditions, adherence to social standards and the efficient and smart use of energy and resources. Measures aimed at improving sustainability include issues such as occupational safety, employee retention and recruiting and environmental protection.

Production and products Although our production has a low impact on the environment, we nevertheless continually search for ways to reduce it further. We make a concerted effort to optimize our products so that they diminish our customers' resource consumption.

We contribute to sustainability and sustainable growth through our products, solutions and services as well. With our support, our customers aim to operate their plants safely, reliably, cost-effectively and in an environmentally friendly way. Therefore our global business activities help to improve quality of life, to conserve resources and protect the environment.

Innovation In 2018 we invested 184.2 million euros in research and development, 7.9 percent more than in the prior year. That equates to 7.5 percent of our net sales. We brought 54 product innovations to the market and introduced 452 new device options. 287 patent applications around the world are proof of the innovative spirit of the Group, which boasts an intellectual property portfolio of nearly 7,800 active patents and patent applications.

More than 1,000 employees in research and development ensure that the innovation engine continues to run at full speed. Endress+Hauser also acquires cutting-edge technologies through company takeovers, cooperates closely with universities and institutes, collaborates with customers and partners and invests in start-ups that can quickly advance new developments with a great deal of freedom.

Customer, partner and supplier relationships Long-term success is possible only by sharing ideas and maintaining a constant dialogue. We are convinced that combined strengths make us more successful. We live out this philosophy in our relationships with customers and partners. Loyal relationships show that openly sharing ideas, trust-based collaboration and mutual learning bring benefits to all participants.

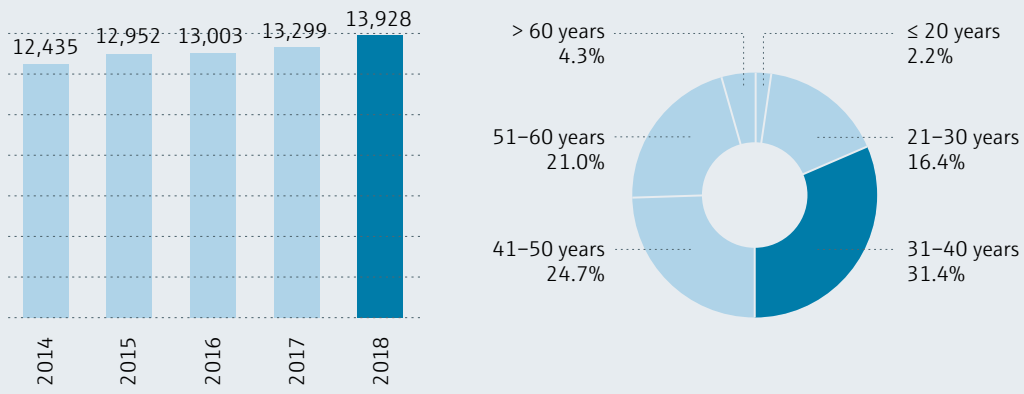
Customers around the world place their trust in us. We capture and monitor this by regularly measuring their level of satisfaction. We systematically analyze those aspects that can be optimized and address them with individual measures to continually improve. Regular survey cycles reveal long-term developments and make the success of the various actions visible and measurable.

Social sustainability

Social responsibility We view creating and retaining secure jobs as an important part of our social responsibility as a company. In addition, the taxes generated by our operations make a significant contribution to social well-being around the world.

In our Code of Conduct we commit ourselves to adhering to applicable laws and regulations. That means not only

Endress+Hauser Group employee headcount and demographics



following the letter of the law, but the respective spirit. For this reason, we refrain from developing tax avoidance strategies and reject any business structures designed to evade taxes. We utilize tax advantages and tax relief only to the extent they accrue in the course of normal business operations and only if we are legally entitled to them.

We strive at all locations to maintain a transparent, professional and constructive working relationship with tax authorities. This includes providing correct and timely information. In 2018 we paid a total of 83.2 million euros in income taxes worldwide, 16.7 million euros more than in the prior year. Our effective tax rate is currently 26.4 percent.

Employees Committed and competent employees are the driving force behind our success. They create relationships with our partners based on trust, drive product innovations forward and generate added value for our customers, thus forming the essential foundation of our growth and profitability.

To provide our employees with a good working environment, we offer performance-based compensation, above-average social benefits, attractive opportunities for career development and a comprehensive program that allows them to strike an effective work-life balance, including access to childcare services and flexible work models. We furthermore invest in the health of our employees and promote their growth through targeted personnel development and training programs.

We strive to continually improve our attractiveness as an employer. We monitor the satisfaction of our employees with regular surveys based on a Group-wide standard to ensure the results provide a comparison. We utilize the outcome of the surveys to align the company with the needs of the workforce in a targeted fashion and to enhance employee satisfaction, because only satisfied employees will deliver outstanding performance for our customers.

Workforce in numbers On a global average, our employees have been working for Endress+Hauser for 10.0 years. The Group-wide turnover rate for Endress+Hauser is 7.7 percent, slightly higher than 2017 (6.4 percent). This reflects the solid economic environment in many countries, where unemployment is correspondingly low. In 2018, a total of 13,928 people (including temporary employees) were employed by the Endress+Hauser Group (prior year: 13,299).

Diversity is a key principle with respect to our employees as well, reducing risks and making us less susceptible to external influences. Employee diversity increases productivity, encourages innovation, strengthens customer retention and helps us compete for talent.

At the end of 2018, people from 96 countries worked for the Endress+Hauser Group. Women represent 30.1 percent of the workforce, a figure that rose slightly from the prior year (29.9 percent) and which is relatively high compared to companies in the industrial sector. The age groups are equally distributed across the Group, with little change experienced compared to 2017.

Occupational health and safety With respect to Group-wide occupational safety, we put significant effort into ensuring our employees enjoy a safe, pleasant and productive work environment. The number of occupational accidents with lost days reached 5.2 per 1,000 employees. It was slightly below the previous year's figure of 5.4 and thus still at a low level.

We initiate accident prevention, risk awareness and work safety measures at our locations depending on the business activities and the local environment. Our occupational safety specialists are generally involved in workplace-related decisions at a very early stage. Company restaurants at numerous locations all around the world offer our employees a varied and well-balanced selection of nutritional meals. Our Group companies also develop individual activities for health promotion and prevention.

Young talent and personnel development As a technology company, we depend on highly qualified professionals and young talent. To attract new employees,

[1] Based on Endress+Hauser production, sales and support centers and Analytik Jena

the Endress+Hauser Group strives to continuously improve the working conditions for its employees and strengthen its internal and external image with targeted employer branding.

Endress+Hauser made a commitment to train and educate young people. Particularly in Germany and Switzerland, we train the vast majority of our specialists internally. Endress+Hauser had 306 apprentices in 2018, which equates to a trainee ratio of 2.3 percent. For many years, we have been in a position to offer virtually every apprentice a permanent position upon completion of their vocational training program.

We view the training of young people worldwide as an important part of our social responsibility. With this in mind, at our production facility in Aurangabad, India, we have started a program comparable to the dual vocational training offered in Germany and Switzerland. We are currently training eight young people there in a one-year course to become electronics technicians, thereby opening up new career prospects for them. We want to establish similar programs in the USA and China.

As part of the Endress+Hauser Masterclass program, we offered our employees in 2018 a broad range of 1,768 courses, seminars and events. Last year we had 52,299 course bookings, a slight decrease compared to the previous year. We established a strategic goal of setting aside 2.5 percent of all personnel expenses for training. This equates to roughly five days of training per employee each year.

Social engagement Endress+Hauser is engaged in volunteer activities wherever the company is located in the world. We sponsor select projects involving social, cultural, educational, scientific and sports activities, as well as the promotion of young talent. In the area of charitable contributions, we focus our assistance mainly on non-profit initiatives and social organizations.

We maintain research and education partnerships with scientific facilities and training centers around the world. We enjoy close partnerships with 15 universities and research institutes. We maintain relationships with education facilities and research centers in 36 countries, which we equip with measurement instruments or complete process technology training systems.

There is no central accounting of the money invested in our broad range of charitable and sponsor activities, and in our research and education partnerships in the form of monetary and equipment donations and personnel resources, because these activities are the responsibility of the Endress+Hauser Group subsidiaries.

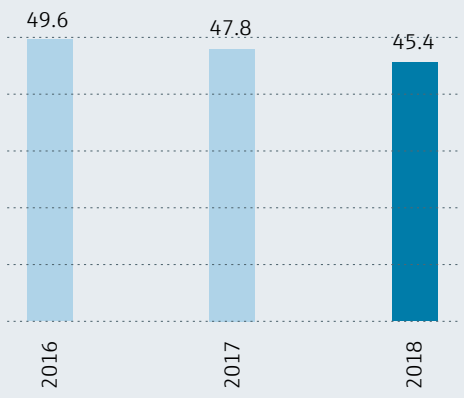
Environmental sustainability

Environmental footprint As a globally active Group of companies, it is necessary for us to consume energy and resources. We nevertheless strive to continually reduce the amount of resources consumed by our business operations and production facilities, as well as the resulting emissions and pollutants, and thus our overall impact on the environment.

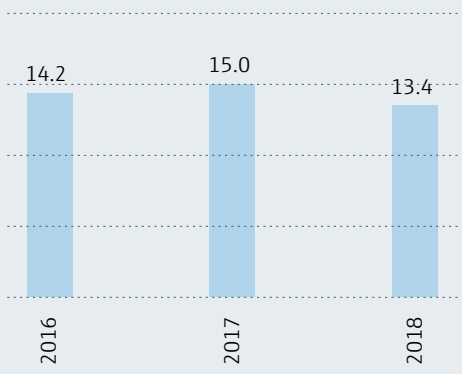
To examine our environmental footprint, each year we capture corresponding data related to energy and water consumption, carbon dioxide emissions and waste accumulation. The data encompasses all Endress+Hauser domestic and overseas production sites, our subsidiary Analytik Jena and since 2016 our sales and support entities all over the world. So far not incorporated in the figures are three smaller Group companies: Swiss sensor manufacturer Innovative Sensor Technology IST, plus US-based SpectraSensors and Kaiser Optical Systems.

Energy Energy consumption for plants and machinery is comparatively low. The production centers use a large part of the energy for heating and lighting, as well as for the office and IT infrastructures. Energy consumption for heating and electricity has declined over the past few years

Energy consumption for heating and electricity (in MWh/EUR millions in sales[1])



Carbon dioxide emissions (in tonnes/EUR millions in sales[1])



as a result of measures to increase energy efficiency. In 2018, it amounted to 45.4 megawatt hours per million euros of sales, a decrease from the previous year (47.8 megawatt hours).

Carbon dioxide Carbon dioxide is considered the key greenhouse gas produced by humans. Experts estimate that it contributes as much as 60 percent of the increase in the greenhouse effect. It thus plays a significant role in the anthropogenic impact on the climate. In 2018, our CO_2 emissions fell to 13.4 tonnes per million euros of sales compared to the previous year's 15.0 tonnes per million euros of sales.

Water consumption At Endress+Hauser, water is required primarily for sanitary and cleaning purposes. We successfully reduced our water consumption last year. Water consumption in 2018 was 109 cubic meters per million euros in sales compared to 110 cubic meters the prior year.

Waste Waste accumulation within the Endress+Hauser Group fluctuates from year to year in relation to the various types of waste, resulting for example from changes in the product mix or reflecting special effects such as construction work or inventory adjustments. Because the information regarding the amount of waste is derived from the disposal company invoices, the various pickup schedules also influence the yearly numbers.

In the 2018 financial year, our worldwide operations accumulated 1,123 kilograms of municipal waste per million euros in sales, a significant decrease from the 1,250 kilograms the year before. The volume of hazardous waste fell from 204 to 194 kilograms per million euros in sales, while the amount of scrap metal shrank from 586 to 529 kilograms per million euros in sales. The volume of electronic scrap remained unchanged in the reporting period at 18.7 kilograms per million euros in sales.

Certification and auditing Sustainability is becoming a focus for our customers as well. How to deal with social and environmental standards has long been a vital part of many procurement processes. All Endress+Hauser production centers are certified in accordance with ISO 9001/14001 (quality management and environmental management) and OHSAS 18001/ISO 45001 (occupational health and safety). Endress+Hauser furthermore analyzes the sustainability of its own business processes by undergoing the EcoVadis audit.

Waste
Scrap metal
Hazardous waste
Electronic scrap

[1] Based on Endress+Hauser production, sales and support centers and Analytik Jena

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Endress+Hauser

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