

Sustainability

An aerial photograph of a town nestled in a valley, surrounded by rolling green hills and vineyards. The town features a mix of residential houses and modern commercial buildings. The vineyards are terraced on the slopes, and the overall scene is bathed in the warm light of late afternoon or early morning.



We believe in a smarter and more sustainable world

The key drivers here are energy efficiency, health, safety, convenience, digitalization and automation. Our sensors reduce energy consumption and greenhouse gas emissions in numerous applications. Our carbon dioxide sensors, for example, ensure that air conditioning is activated only when offices are occupied. This saves energy and improves the overall carbon footprint. Humidity and gas flow sensors in cars measure air intake to ensure compliance with the latest emission standards. The number of these environmental applications will be increased in the future.

We strive to make more sustainable decisions throughout the entire company, particularly in development and production. The aim is always to increase the use of recyclable materials in our products and their packaging, to optimize the environmental impact of our sensor solutions throughout their entire life cycle and increase the positive impact they have when used.

Our future aim is to reduce our energy consumption in production while increasing the share of renewable energy. We also want to provide all employees with a work environment that promotes sustainable business growth and environmentally friendly, long-term value creation for all of our stakeholders.

Marc von Waldkirch, CEO

Stakeholder value creation

Going the extra mile

Although Sensirion has long enjoyed the status of a mature, global market leader in the sensor technology field, we are still fond of looking back on our company's early days. Our brand story underscores the great importance we still attach to the startup ethos. We want Sensirion to continue evolving dynamically and with a pioneering spirit. Curiosity and passion have been our fundamental attributes for the past two decades and strongly influence how we work together with our stakeholders.

Our company's purpose also greatly impacts our relationships with them. We develop innovative sensor solutions to help improve health, efficiency, safety, security and quality of life. From time to time, we also revisit some fundamental questions: Why are we here? Would the world be better or worse off without us? What new goals can we set for ourselves?

Cultivating long-term relationships

Our endeavors to maintain a youthful spirit, curiosity and passion – coupled with our company purpose and SensiSpirit – help us forge lasting relationships with our customers, employees, prospective employees, shareholders, analysts, suppliers and the general public.

A message for our customers

We would not exist without our customers. And without us, our customers would take a different trajectory. We develop complex solutions in sensor technology. Our customers tell us what they need. They expand the specifications and look forward to seeing the excellent realization of groundbreaking solutions. Mutual collaboration is picking up speed. It takes years to form the strong bonds and reciprocal trust necessary to accomplish big things together.



A message to our customers: "Dear loyal customers, we always look forward to new challenges when you throw us a curveball and ask us to make the impossible possible. This is the only way to improve each and every day. And it's the only way for Sensirion to continue developing well into the future."

A message for our employees

We would not exist without our employees. Sensirion owes its success to all the smart employees all over the globe who are putting our SensiSpirit principles into practice to achieve big things. The foundation for this is also a collaborative relationship. Sensirion takes care of its employees, supports them in the advancement of their careers, advocates for diversity and fosters a positive and stimulating work atmosphere. Employees share Sensirion's values. Time and again, they go the extra mile needed to achieve success together in global markets.

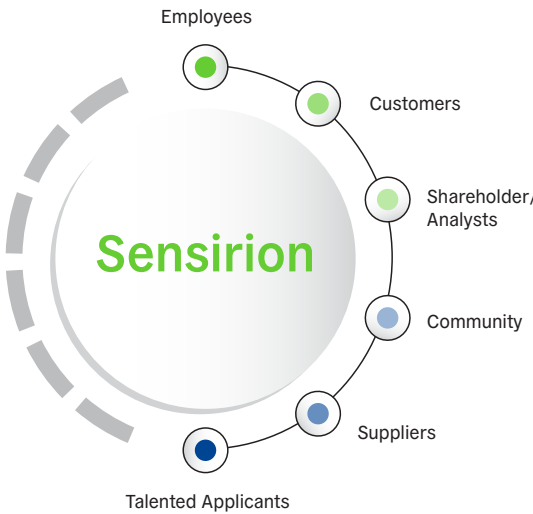
A message to our employees: "Dear employees, we're proud of you. And maybe also just a little bit proud of ourselves because we did, of course, choose you. Because we believed you were a good fit for our company culture, were among the best in your field and possessed the ability and willingness to always push your limits, to pass on the SensiSpirit and to share your expertise with others. For tomorrow's generation of Sensirion employees. It all comes full circle, ensuring the long-term success of the company."

Make good things even better

Act sustainably out of conviction

Develop continuously in
a rapidly changing environment

Identify and use chances
for cooperation

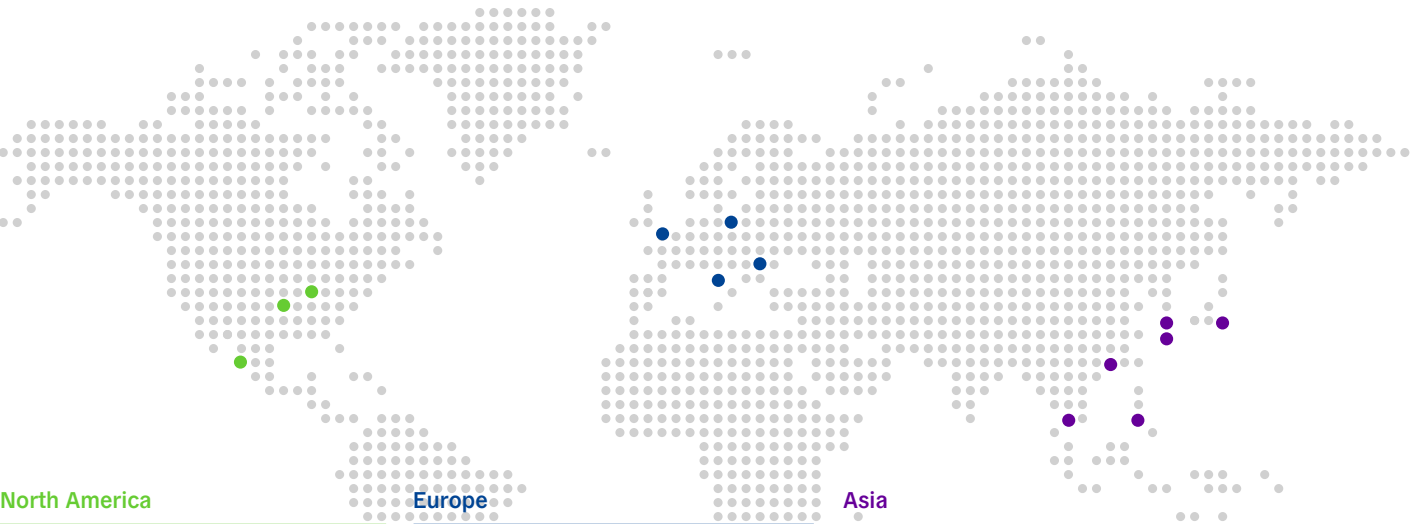


Sensirion at a glance

Company information

Sensirion Holding AG is a joint stock company listed on the SIX Swiss Exchange and is headquartered in Stäfa, Switzerland. Sensirion has eight offices in China, Germany, Hungary, Japan, South Korea, Taiwan, the Netherlands and the United States. Sensirion develops and produces sensor solutions for measuring environmental parameters, gas flow, liquid flow and machine diagnostics. The company enjoys reputation as a global market leader in the automotive, medical, industrial and consumer goods sectors. Customers integrate the company's sensor solutions into their products.

974 Employees (FTE) worldwide
as of 31 December 2021



North America

- Sensirion Inc. (Chicago, United States)
- Sensirion Automotive Solutions Inc. (Eaton Rapids, United States)
- AiSight Inc. (San Francisco, United States)

Europe

- Sensirion Holding AG
- Sensirion AG
- Sensirion Automotive Solutions AG
- Sensirion Connected Solutions AG (Stäfa, Switzerland)
- Sensirion Hungary Kft.
- Sensirion Automotive Solutions Hungary Kft. (Debrecen, Hungary)
- Qmicro B.V. (Enschede, Netherlands)
- AiSight GmbH (Berlin, Germany)
- IRsweep AG (Stäfa, Switzerland)

Asia

- Sensirion Automotive Solutions Korea Co., Ltd. (Seoul, South Korea)
- Sensirion Automotive Solutions (Shanghai) Co., Ltd. (Shanghai, China)
- Sensirion Korea Co., Ltd. (Dongan-Gu, South Korea)
- Sensirion Japan Co., Ltd. (Tokyo, Japan)
- Sensirion Taiwan Co., Ltd. (Zhubei City, Taiwan)
- Sensirion China Co., Ltd. (Shenzhen, China)

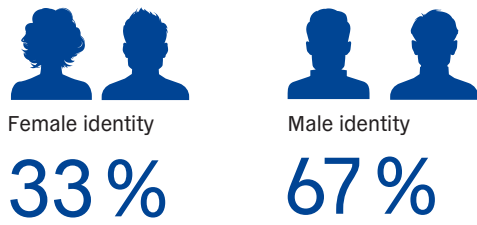
Organization

As a Swiss joint stock company, Sensirion has the following management structure: Board of Directors and Executive Committee, with the Audit Committee, Nomination and Compensation Committee and the Independent Directors Committee as subcommittees. The Executive Board, headed by CEO Marc von Waldkirch, reports to the Board of Directors. The Executive Board is responsible for sustainability matters at Sensirion. For detailed information on corporate governance, refer to the section beginning on page 56 of this annual report.

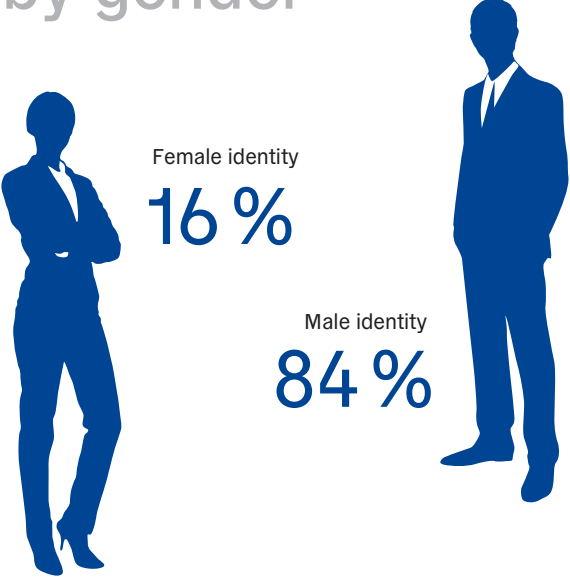
Figures

As of December 2021, Sensirion had 974 employees (FTE). The group's sales totaled CHF 287.5 million. Total assets amounted to CHF 296.4 million. For detailed information on the company's financial position, refer to the section starting on page 100 of this annual report.

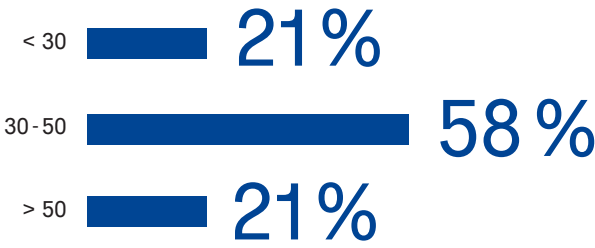
Gender



Teamleader by gender*



Age*



* Switzerland only

* Teamleader and all levels above; Switzerland only

Employees as of December 31

Total employees	APAC	EMEA	Americas	Total 2021	Total 2020
Full-time equivalents (FTEs)	228	728	18	974	788
Head count	228	801	18	1047	851

Employees by employment type (FTEs)						
Full-time	Women	133	133	3	269	218
	Men	94	421	15	530	406
Part-time	Women	0.6	53.4	0	54	48
	Men	0	121	0	121	116

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Our employees see the overriding objective, accept tasks and responsibility, even if they have not been assigned to them.

Heiko Lambach, Vice President Human Resources



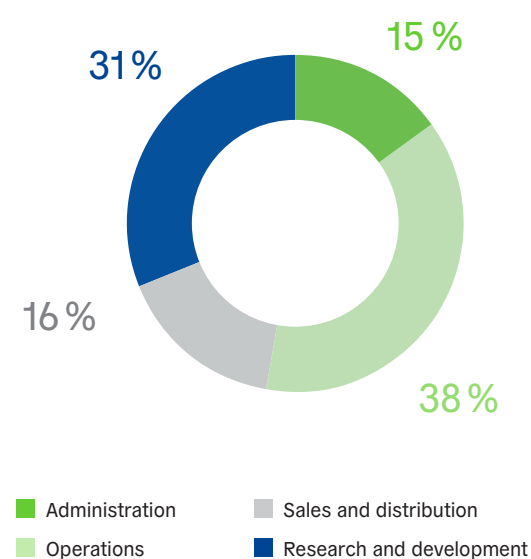
Supply chains

Sensirion is a major market player in Europe, Asia and the United States. Our suppliers, however, are located all over the world. We work with regular suppliers for manufacturing our sensor components. EMS suppliers (for PCBA) and plastic injection molding suppliers (for housing) are used in sensor module products.

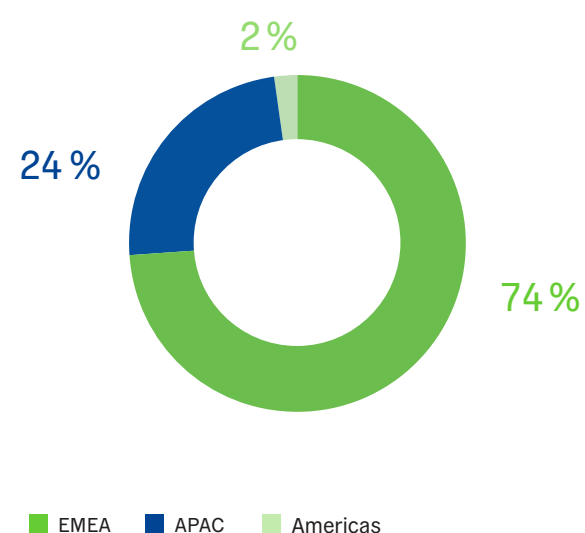
In 2021, global supply chains were disrupted by the COVID-19 pandemic. The semiconductor market and sectors for associated materials, such as wafers, chemicals, lead frames and plastic resins, were hit particularly hard. This resulted in understaffing, plant closures, raw materials shortages and transport bottlenecks. On top of this, demand was still high.

Thankfully, Sensirion and its main suppliers have a bond forged through long-standing strategic partnerships. Materials warehouses were stocked with the high-demand materials in due time for 2021. In addition, Sensirion reached agreements with suppliers for rolling deliveries for a period of twelve months. There is no apparent financial risk in this regard as the products and semiconductor components used in the various products have long product life cycles.

Employees by department



Employees by region



In 2021, Sensirion opened a new production site in Debrecen, Hungary, and acquired three startups in the Netherlands, Germany and Switzerland.

Construction site of the new business and production building in Debrecen, Hungary



Company culture, company values

What is SensiSpirit?

All its ambition and drive to succeed aside, the founding generation never forgot that the human factor comes first. The company values, which are still as present as ever, derive from the SensiSpirit and, in turn, shape our company's culture.

Fair and honest

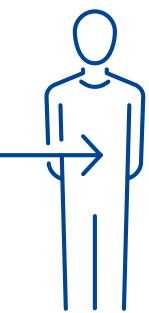
These values are still the guiding principle for how we work with all involved parties here at Sensirion, be it customers, suppliers and partners externally or our employees internally.

Together

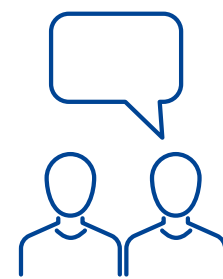
One thing was clear from the outset: "If we are to succeed, we must succeed together." Every employee and supplier can and should be actively involved. The journey to find workable solutions is a constructive process. Teams are not opponents; they are partners who work in concert. And the goals of the individual dovetail into the overall mission.

Top performance

Those who better understand the needs of customers will come out on top. This is because they offer innovative solutions and set themselves apart from the competition. SensiSpirit also means having a competitive drive – in other words, bringing an entrepreneurial mindset and expertise to the table, thinking innovatively, sharing responsibility and achieving extraordinary things. Day in and day out.



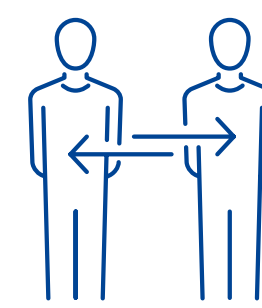
Sensirion was founded by entrepreneurs who live by entrepreneurial values and leave their mark on its corporate culture – the cornerstone of business success.



What came first?

Corporate culture or company values? How do corporate culture and company values affect success in business? Is there an interplay between corporate culture and company values?

Sensirion was founded in 1998 as an ETH Zurich spin-off. It goes without saying that its founders Moritz Lechner and Felix Mayer had a vision. After all, without a vision and expertise, a startup could never become a global enterprise. But there's still more than meets the eye, much like the human spirit. The first employees developed a company style to reflect their own nature. Today, we affectionately refer to it as the SensiSpirit.



Well-established culture and values

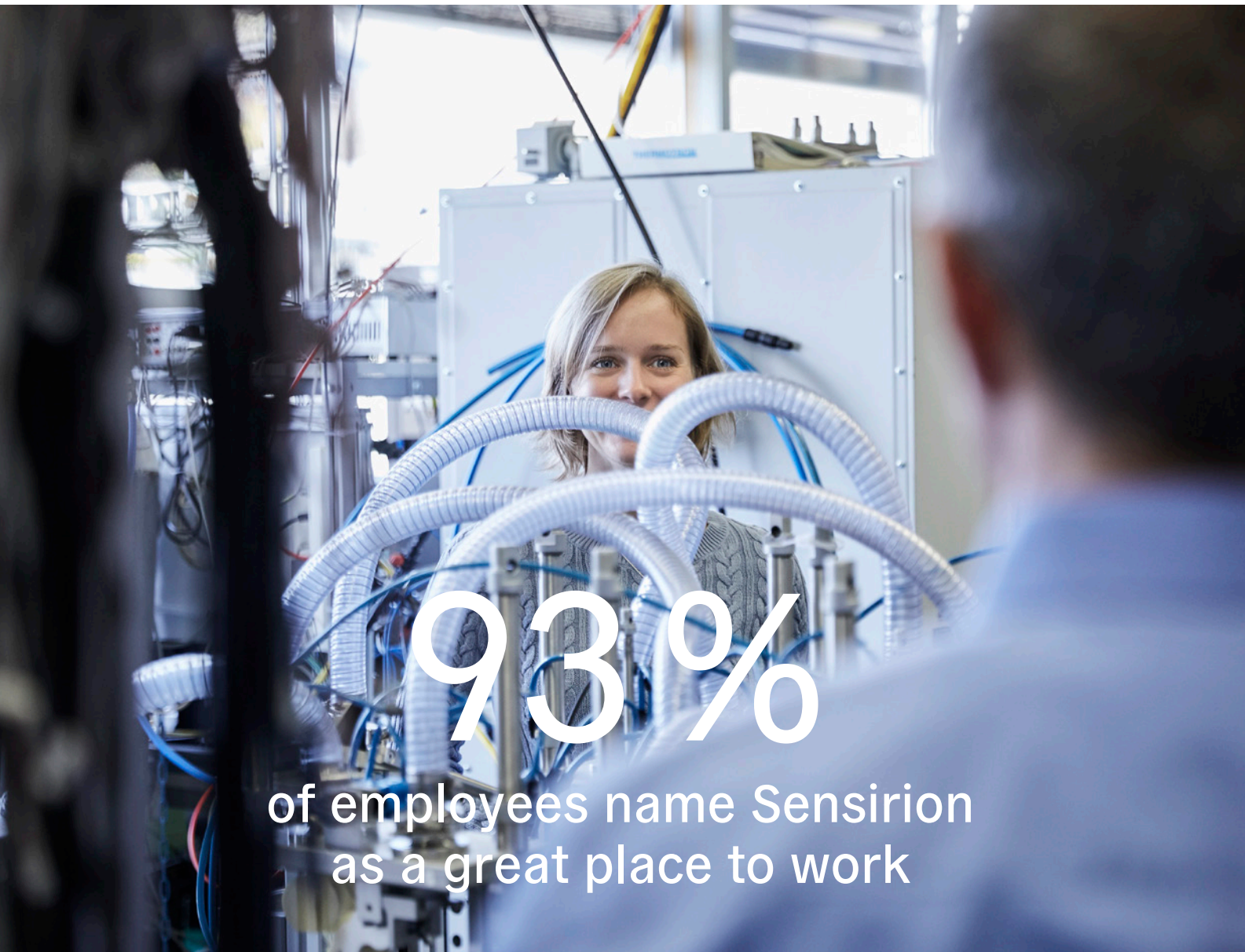
Culture crystallizes, and values emerge. It is important for corporate culture and company values to be part of a long-term commitment. The SensiSpirit is the reason why so many talented individuals choose to work for us. Employees must be a good fit for our company culture, which is something we cultivate during workshops, regularly scrutinizing and solidifying it and the values it creates. We hold town hall meetings every two weeks – sometimes internationally – to foster an open and transparent communication policy and to ensure that all stakeholders are on the same page. And true to the motto "work hard, play hard", the after-work beer with the team to wrap up the working week and company outings are of course part of the package. This interaction bolsters team spirit and builds trust, paving the way for excellence. In the face of challenges like the ongoing pandemic, it becomes clear just how important this is. This overarching philosophy also explains why our company is regularly recognized as an outstanding employer.*

* In 2021, the international Great Place to Work Institute ranked Sensirion second among Swiss employers in the Large Enterprise category.

Social topics

Making the difference

At Sensirion, we know that our people make the difference – employee engagement is therefore paramount. We provide a safe and healthy work environment where our “Sensis” can be at their best.



93%
of employees name Sensirion
as a great place to work



Top rankings

We are always committed to providing an inspiring and motivating environment to keep employees passionate in their day-to-day performance. In 2021, Great Place to Work ranked Sensirion second among Swiss employers in the category of large companies with more than 250 employees. Great Place to Work also gave Sensirion a special prize for its handling of the pandemic. Sensirion has commissioned Great Place to Work to collect anonymized data from employees for the purpose of monitoring our work culture.

On Europe’s leading employer rating platform, kununu.com, employees can rate their employers anonymously in the categories of Career & Salary, Company

Culture, Work Environment and Diversity. Prospective employees can check kununu.com to find out how many stars their potential employer has. Since 2010, 218 people have submitted ratings for Sensirion, with an average of 4.2/5 stars. The industry average is currently 3.1 stars. Sensirion is a cut above the rest. The reason lies in its culture.

Our open, honest, appreciative and communicative culture is the basis for long-term employee satisfaction, meaningful performance reviews that benefit both sides of the table as well as promising career paths.

Employee satisfaction

Year	Scale*	2019	2020	2021
Subjective personal well-being in team	0-10	8.3	8.4	8.3
Subjective personal well-being in organization	0-10	8.1	7.9	8.1

*0 = very bad, 10 = excellent

We meet with employees for performance reviews twice each year, in June and in December. The main purpose of the meeting in June is to discuss the development of the respective employee, their learning curve and to reveal their potential. What specific tasks might they be able to take on at Sensirion in a few years? The purpose of the year-end review in December is a general “taking stock” together: which of the employee’s solutions were the most and least successful, and why? What challenges lie ahead in the coming year? Is the employee happy working with the team, and vice versa?

Employee well-being



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To achieve a good work-life balance, family life should never fall by the wayside.

We exercise or play sports together, enjoy meals together and work together. There is a broad range of possibilities: football, table tennis or floorball – or perhaps working out at the gym, a yoga class or enjoying a massage. When it’s time to eat, employees can go to the canteen for a delicious meal, salad or bowl of muesli. During the week, there are also several food trucks nearby serving up gourmet quick bites.

To achieve a good work-life balance, family life should never fall by the wayside. During our Sensi Weekend, at the Santa Claus event or for the New Year’s feast, employees and sometimes their families have the chance to be part of some lovely cultural and social get-togethers.

Employees also regularly participate in training aimed at raising awareness about issues related to quality, health, safety and security. They can even get their annual flu shot directly on site.

Living with the pandemic

On March 16, 2020, the Federal Council of Switzerland declared a state of emergency and instituted a lockdown. So many things changed globally overnight. Since then, Sensirion continuously expanded its internal protection concept and implemented further safety and protection measures. This involved setting up additional mobile and location-independent workspaces. The IT infrastructure underwent extensive development to guarantee secure data communication. Meeting rooms were converted to accommodate hybrid conference formats. Training was conducted virtually and social events also took place virtually. For example, employees had their Friday after-work beer delivered and kept up the SensiSpirit ritual of kicking off the weekend in front of their screens.

Complaint management

The term “whistleblowing” makes some people flinch when they hear it. Employees may feel mistreated or have witnessed unlawful or unethical conduct. The only solution might seem to turn to the media. The damage to the company’s reputation – not to mention the whistleblowers themselves – is often enormous.

Sensirion has clear processes in place for complaint management and conducts regular audits. The fundamental idea behind this is “those whose complaints are justified need not fear the consequences”. Complaints can also be submitted anonymously. Complaints about Executive Board members are handled discreetly by a member of the Board of Directors; complaints about employees are handled by the Vice President of Human Resources. For complaints about other stakeholders (e.g. suppliers), there is an ethics complaint form on our website.

Bike ride to work



6:30 a.m.: leaving his home in the Swiss town of Hirzel, Jürg Eugster gets on his rugged “gravel bike” as it’s known in cyclocross circles and zooms down hiking trails through Wädenswil and to the passenger ferry, which leaves for Stäfa at 7 a.m. During the ten-minute ferry ride, Jürg already bumps into a few colleagues who are also on their way to work by bike. The ride from the dock in Stäfa to Sensirion takes another ten minutes. Jürg’s trip each day takes a good 45 to 50 minutes one way. To be on the safe side, he plans in 60 minutes per journey, although traveling from Stäfa back home again takes a bit longer because of the 350 meters he has to pedal uphill. Jürg adds, “Things get sticky in nasty weather, when it rains or snows. This makes the bike ride from Wädenswil back to Hirzel really strenuous. Passing cars splash dirt in my face.”

Jürg bikes to work every day. One reason is that his family needs the car during the day. Another reason is that driving would take him almost as long. By cycling, he can also check his daily exercise off the list. And sure, thinking about the environment also plays a part. Jürg is forty, has two sons, age five and seven, is a physicist and has been working at Sensirion as Team Leader Sensor Integration Processes since October 2014. He began biking to work in 2017.

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Things get sticky in nasty weather, when it rains or snows.

Talents

Building career foundations



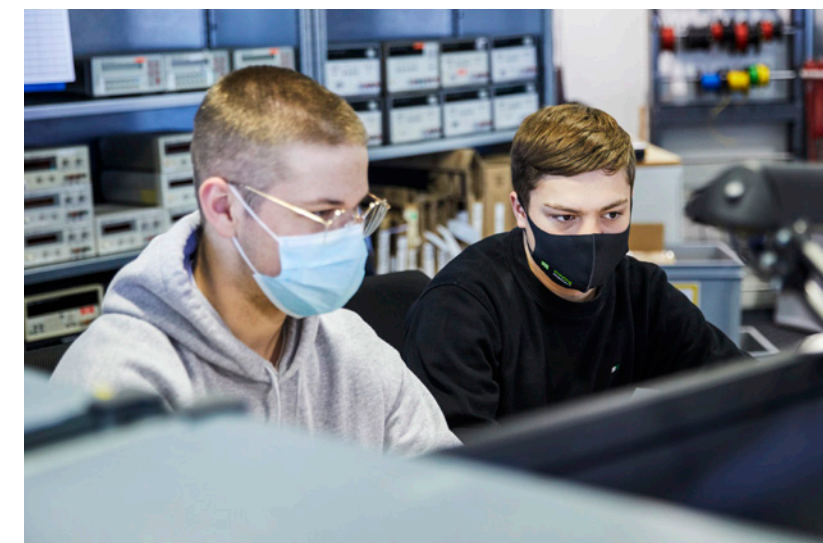
98%
of apprentices say:
I believe my work can make a
real difference.

All of Sensirion's 19 apprentices who completed the company's survey agree. The flow of information, clearly communicated expectations, the feedback culture, satisfaction in the workplace and celebrating milestones as a team continue to get top ratings in this survey. Sensirion takes these young people seriously from the start. And this lasting sense of value has a motivating effect; it is obviously something people appreciate.

Each year, five or six apprentices start out in one of the nine different apprenticeships we offer. Sensirion is an advocate of the dual-track vocational education and training system. For one, it offers young people excellent basic training with our company, building a foundation for taking the next steps in their careers. The vocational school also gives them the necessary theoretical knowledge.

Apprentices can choose from the following:

- Federally Certified Electronics Engineer (EFZ)
- Federally Certified Computer Scientist with focus on business IT (EFZ)
- Federally Certified ICT Specialist (EFZ)
- Federally Certified Design Engineer (EFZ)
- Federally Certified Business Administrator (EFZ)
- Federally Certified Maintenance Specialist (EFZ)
- Federally Certified Logistics Specialist (EFZ)
- Federally Certified Automation Engineer (EFZ) (in partnership with "libs Industrielle Berufslehren Schweiz", www.libs.ch)
- And, beginning in 2022: Federally Certified Physics Lab Technician (EFZ)



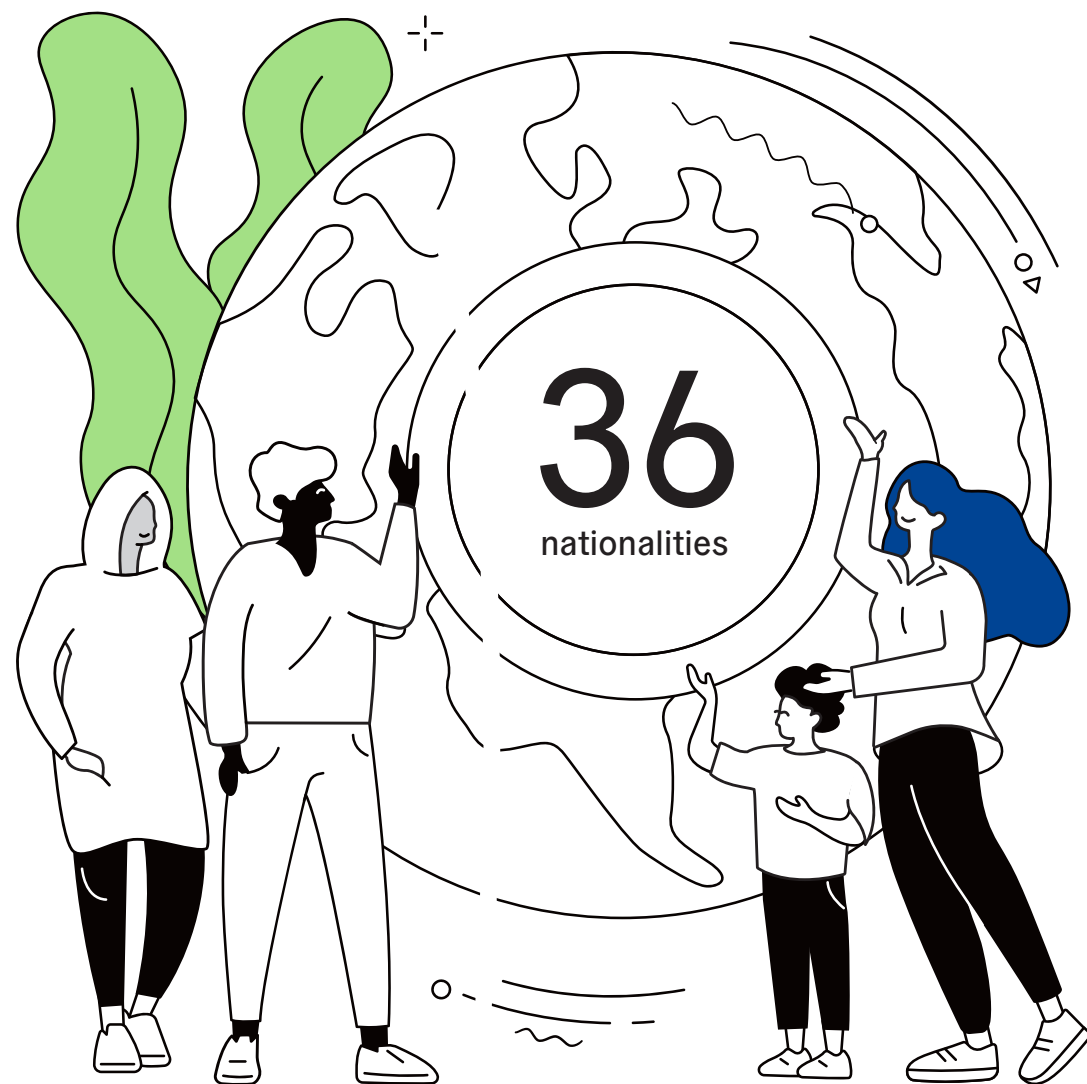
Our apprentices are treated like permanent employees from the very beginning and are well integrated.

Programs for trainees and interns

During the reporting year, two trainees began our company's 18-month Tour d'Horizon program. The journey takes them through the Sales division, where they learn about everything from market analyses and product development to marketing campaigns. A stint in the Technical Customer Support department helps familiarize them with Sensirion's products and customers. In addition to the already mentioned program, thirty interns spend six months working for Sensirion. During this time, they gain extensive insights into the Research & Development, Marketing, Sales and Product Management divisions.

Ongoing employee development

Veteran employees have a wealth of experience and knowledge. Our HR strategy focuses on furthering employees in their careers, discovering new talent and maximizing employee retention. The methods for achieving this include vocational education and further training, a culture of personal responsibility and proactiveness, the opportunity to rotate between different jobs and promoting international exchange.



Diversity is a top priority

Austria, Bosnia and Herzegovina, Brazil, Bulgaria, China, Croatia, Eritrea, Estonia, France, Germany, Hungary, Iraq, Ireland, Italy, Kosovo, Luxembourg, Montenegro, Morocco, Netherlands, New Zealand, North Macedonia, Poland, Portugal, Romania, Russia, Serbia, Slovakia, Slovenia, South Korea, Spain, Sweden, Switzerland, Taiwan, Turkey, the United Kingdom, the USA. Sensirion employed people from these thirty-six countries in 2021.

Our culture and values are what unite these people to form a global team. Discrimination is always off-bounds at our

company. A comparison of salaries in Switzerland commissioned by Sensirion in 2021 revealed that women and men at Sensirion earn equivalent salaries for the same function and performance.

Sensirion supports the career advancement of all genders equally. We also observe that more and more women are showing a stronger interest in technology. At Sensirion, we encourage and support qualified people of all genders to take up leadership positions and inspire others with our culture of diversity and inclusion.

Product responsibilities – Innovation for a sustainable future



It is our mission to contribute with innovation and technology to a better world tomorrow. Today, our products are already contributing to a better quality of life or helping to reduce energy efficiency and CO₂ emissions in a wide range of applications. This is also our commitment for the future.

As a customer-focused company, it is important for Sensirion to collaborate with its customers and partners to explore promising new technologies and develop cutting-edge products that enable customers to be responsible providers and market leaders.

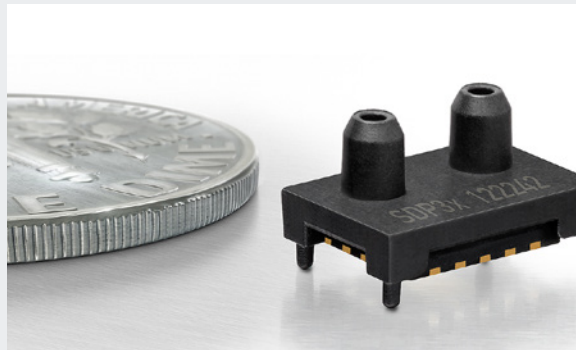
Medical ventilators

The demand for ventilators increased sharply during the pandemic. Sensirion was already a market leader in this market segment. Then it had to increase production tenfold within three months. Thanks to the incredible dedication of all employees who were part of this effort, it was a success.



SDP3x – sensor technology for lightweight portable CPAP devices

Every year, sensors made by Sensirion are used to monitor more than 15 million patients with sleep apnea: airflow and pressure are precisely controlled to keep the airways open.



Refrigerators

Heaters are installed in the doorframes of refrigerators to prevent condensation. Depending on the design, the reduction in energy consumption achieved with the smart dew point can improve the IEC standard energy rating.



Air conditioning systems in vehicles

Over 160 million sensors made by Sensirion have been integrated into automotive applications. Sensor-controlled air conditioning systems ensure a year-round comfortable climate in passenger compartments, increase safety and reduce fuel consumption.

Engines in vehicles

One-third of all new cars around the world are equipped with humidity and temperature sensor solutions. Sensor production volume: 90 million. Advantages: less pollutant emissions, lower fuel consumption and optimized engine control with air flow regulation.

Sustainable facts

10x increase of ventilator production within three months due to COVID-19

15 mio

patients with sleep apnea monitored daily

4.8 mio t

of CO₂ saved in total in air conditioning applications in vehicles

3-4 % reduced energy consumption due to smart humidity sensors in refrigerators

2.7 mio t

additional CO₂ savings through intelligent air-flow sensor technology in engine vehicles



Susanne Pianezzi, a physicist at Sensirion since 2016 and Sales Director for the recently founded subsidiary Sensirion Connected Solutions, is in charge of sales and business development for all markets. She also manages distribution for Nubo Sphere and any future environment and sustainability solutions.

Sensirion enjoys a reputation as an expert in environmental sensing, and sustainability is in its company DNA. An interview with Susanne Pianezzi, Sales Director at Sensirion Connected Solutions.

Susanne, you're working on our new IoT solution, Nubo Sphere. What are the goals of Nubo Sphere?

Nubo Sphere is our brand-new "fully integrated, end-to-end IoT solution" (Internet of Things) for detecting, locating and quantifying methane emissions. Its development began in mid-2021, and we will be launching the first generation in mid-2022. Methane escapes from oil and gas production plants, sewage treatment plants and biogas plants, for example. If we are to meet the targets of the Paris Climate Accords, we will also need to reduce methane emissions in addition to carbon dioxide.

What is unique and innovative about this solution?

Solving this complex problem requires deep application know-how as well as close interaction between innovative sensors and advanced data analytics. This fits perfectly with Sensirion's DNA to solve complex problems in an interdisciplinary manner. Our strength is to cover the entire value chain from sensors, high-performing algorithms to a user-friendly dashboard, so this interaction can be maximally optimized.

So, Nubo Sphere detects methane emissions and helps reduce environmental impact. Does Nubo Sphere address any other sustainability aspects?

Nubo Sphere consists of a sensor node with solar panel, wind sensor, wireless communication and a methane sensor. One key feature of the solution and the sustainability of Nubo Sphere is that it runs on solar power and can even be used in remote locations that are not connected to the power grid. Another feature is the solution's sustainable sensor cartridge design: for example, if gases other than methane need to be measured for safety and environmental applications in the future, the cartridges in the sensor node can simply be replaced with different ones. This is good for the environment because you don't have to replace remaining hardware that is already installed in the field.

Sensirion was founded in 1998 as an ETH Zurich spin-off. Sustainability is a key aspect of its mission. Was this the right path?

Back in 1998, I'm not sure if I would have been able to articulate the complex reasoning surrounding sustainability in the same way Sensirion's founders do today. Today, it is appropriate and important that Sensirion uses innovation to make sustainability a guiding principle in its mission and to actively embody these principles – which is also interesting from a business standpoint.

Generally speaking, does sustainability make final products more expensive?

Production costs can indeed be somewhat higher when you're trying to make the final product sustainable. In addition to sustainable production costs, follow-up costs should also be considered. Those are impacted by future regulations on minimum prices, consumer tariffs or emissions penalties.

Can companies make money with sustainability?

By using Nubo Sphere, natural gas operators invest in a path towards net zero and thus actively contribute to the fight against global warming. More and more, consumers are also willing to pay a surcharge for environmentally friendly or sustainable products. In the context of the energy industry, natural gas can be said to be responsibly sourced if it is extracted and transported under low methane emissions. New regulations and best practices evolve worldwide to support those efforts.

Lastly, if we could grant you three wishes, what would they be?

For our society to return to a more normal life, in practical terms, the health of everyone. In the long run, we work together to address the challenges of climate change on a global scale. To achieve this, every individual, society, politics and also the economy must make their contribution. Only in this way can we leave a stable, safe and healthy environment for future generations.

The new production building in Debrecen comprises two storage tanks (cooling and heating with geothermal energy) to maintain the required production environment.

Fab-in of the hot water storage tank into the new business and production building in Debrecen, Hungary





Attentiveness

Caring for our environment

30 %
reduced
energy intensity

The concept of “sustainability” plays a key role in our relationships with customers, employees and suppliers. Sustainability is critical to the work we do in developing and manufacturing our products.

But another important part of how Sensirion defines sustainability is taking a sensible approach to our use of environmental resources. This includes consuming less energy and water, sourcing renewable energy, locating production closer to customers, keeping our employees comfortable, cutting CO₂ emissions and manufacturing products without hazardous substances whenever possible. We want to take care of the environment for those who come after us.

Energy

Sensor production is an energy intensive business. There are two main drivers that dominate energy consumption: the buildings to keep the production within the given environmental specification, e.g. humidity, temperature or cleanness, and the production equipment (mainly in the MEMS cleanrooms). In order to increase comparability over the years, Sensirion has decided to report in accordance with GRI standards scope 1 and 2 by calculating energy consumption as an intensity in relation to gross profits*. This approach is also used for CO₂ emissions.

Between 2017 and 2021, energy intensity could be reduced by almost 30% thanks to various efficiency measures and economies of scale. However, compared to 2020, energy intensity in 2021 remained at the same level, mainly due to the one-off effect of Sensirion putting the new site in Debrecen, Hungary, into operation. Sensirion is committed to sustainably reducing its energy intensity further in the coming years by launching more efficiency initiatives.

Environmentally friendly humidification

At the end of 2020, Sensirion began replacing the two air handling units for air purification in the main building in Stäfa. Air handling units contain filters, components for heat recovery, ventilators, air heaters, etc. The new air handling units meet the criteria for the A+ energy rating as defined by the EUROVENT RS 4/C/001-2019 standard. The adiabatic air humidification system is the best choice for environmentally friendly air humidification. It uses an ultrafine spray generated at high pressure to achieve highly effective, economical air humidification. This eliminates dry air to ensure workers inside the building are comfortable.

Renewable energy

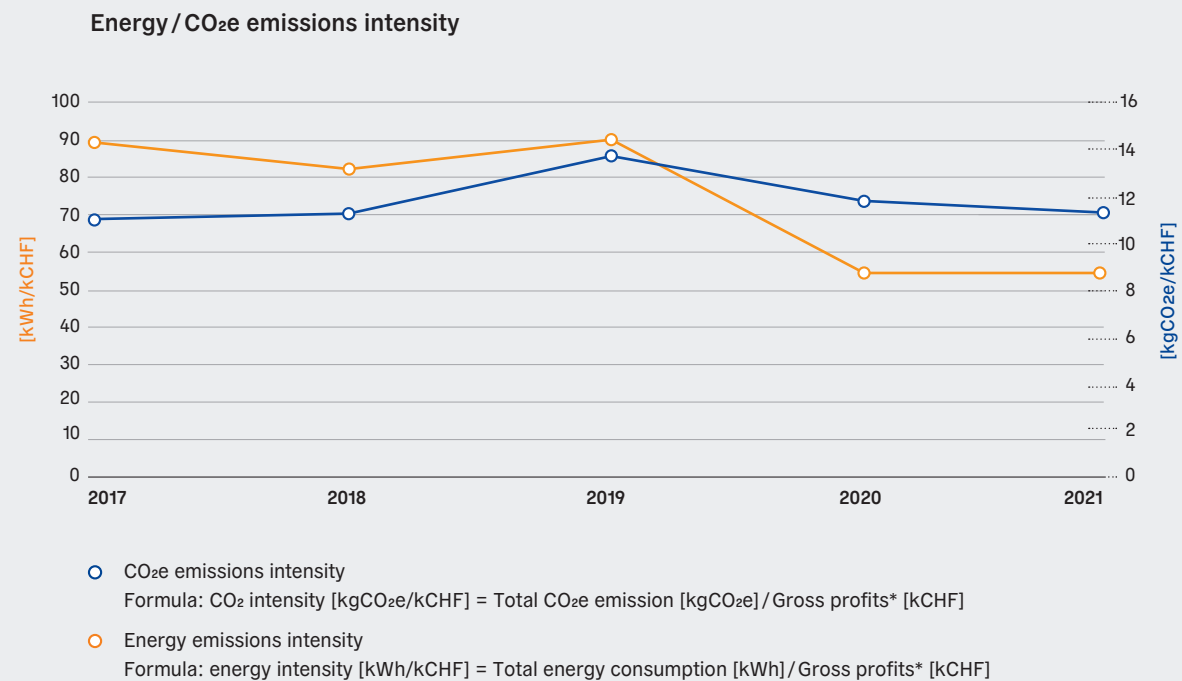
In 2019, we installed solar panels on the roof of our office building in Stäfa, Switzerland. In 2021, the solar panels generated 112 MWh of energy despite the mediocre summer weather. This was just slightly below the figure from 2020. The energy requirements of the building fitted with solar panels were met. Starting in 2022, Sensirion plans to source sustainable hydropower for its headquarters which will further improve its carbon footprint.

CO₂ emissions

CO₂ emissions are produced at various places along our value chain. The main drivers are manufacturing process gases, fossil-based electrical power (mainly in Asia) and fossil heating. Our goal is to minimize these emissions and reduce our ecological footprint. For example, climate-damaging process gases, which are indispensable for the processing of MEMS chips, have been treated for years with state-of-the-art filter systems. Sensirion uses the same reporting approach as in the previous paragraph (Energy) and calculates a CO₂ intensity that sets CO₂ in relation to gross profits*.

In 2021, Sensirion managed – with a reduction of 4% in comparison to 2020 – to again reach the CO₂e intensity level of 2017/18. The peak in 2019 was mainly due to a one-time effect of putting the new Shanghai site into full operation.

* Gross profits = sales minus material expenses



Can we reduce emissions by miniaturizing components?

The production of silicon chips is an environmental stress factor. One way to mitigate this is by building our sensors with smaller silicon chips. We are also replacing glue processes with ultrasonic welding. Small sensor components consume less energy in production, are more economical to ship and produce lower CO₂ emissions.

How can the ecological footprint of the supply chain be reduced?

In our manufacturing process, we are striving to produce less waste. This is achieved with innovation in the product development process as well as shorter transport routes. Goods are sourced locally whenever possible. Our suppliers also comply with strict packaging requirements and recycle used materials.

Can emissions from business trips also be reduced?

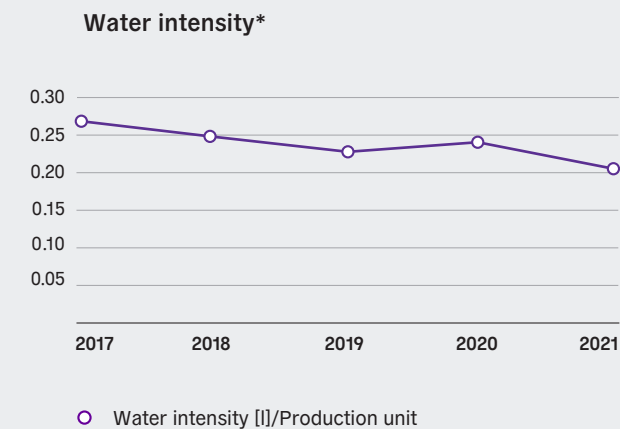
We have learned a lot from the pandemic. For example, many previous in-person meetings are now held virtually – and will likely continue to be so in the future. We have also decided to compensate for our business flights with myClimate. The total came to 66 tons of CO₂ in 2021.

Does Sensirion create any incentives for its employees to use public transportation?

A parking fee was introduced in 2019 for employees who drive to work. This money is collected and returned to all employees in the form of an eco-bonus that subsidizes the purchase of SBB Half-Fare subscriptions or other transit passes. Then we have “Franz”, the Sensi e-car, that can be used for business as well as private trips. And because e-cars are becoming more popular all the time, we have installed charging stations.

Debrecen: a sustainably built production site

July, 2021. The production site in Debrecen, Hungary, begins operations. The advantages of the site include its proximity to European customers, high standard of training for potential employees on site and the network of local partners. Using the headquarters in Stäfa as a model (clarification: geothermal/heat recovery coupled with an accumulator system), the new site was designed and built to operate without fossil fuels.



15 %
reduction of water consumption per unit of output.

Features and benefits of sustainable construction

The building was designed and constructed with two floors, unlike the conventional single-story building with high ceilings. This requires less space for construction and the lower ceilings reduce air volume for air purification and conditioning. As a result, less energy is required for cooling, heating and (de)humidification. The site is operated without fossil fuels (natural gas, oil). The heating and cooling systems use reversible heat pumps that recover and store heat in large containers, each with a volume of 60 m³.

Water

In Stäfa as well as in our production facilities and warehouses in Shanghai, Seoul and Debrecen, we are committed to the responsible management of a precious resource: water.

We use water primarily for the separation of silicon wafers for the individual sensors (dies). The wafer saw dices the wafers using a high-speed rotating diamond saw blade. The saw blade is cooled with water. Thanks to the most state-of-the-art saws and ever tinier sensors (more dies per wafer), water consumption has continued to drop compared to the units we produced five years ago. Since water consumption correlates well with the number of units produced, Sensirion has decided to calculate water consumption as intensity in relation to production units (PU). Between 2017 and 2021, water consumption per production unit dropped 15% (from 0.265 liters/PU in 2017 to 0.220 liters/PU in 2021).

Hazardous substances

We have minimized the use of hazardous chemicals in our production processes. In production, we only use hazardous chemicals in closed and fully automatized installations and machines. In our R&D labs, all employees have completed an apprenticeship or a degree in technology or the sciences. They are regularly trained and well protected with appropriate personal protective equipment. The hazardous substances in our sensors are compliant with the relevant laws (REACH, RoHS and others) and customer requirements. Even during the development stage for new sensors, we ensure that all materials provided by our suppliers are fully compliant. We also regularly analyze the materials used in our sensors in a specialized laboratory to ensure that these high standards are regularly maintained. Our production sites are always subject to inspection by the local authorities as well as customer and third-party audits.

* Gross profits = sales minus material expenses

Quality and certifications



By disclosing its environmental reporting data to CDP in 2021, Sensirion Holding AG has demonstrated a commitment to corporate environmental transparency.

The highest standards of quality

Aging tests are used to measure reliability when developing new products. During the product qualification phase, sensors undergo repeated testing before receiving approval for mass production. All Sensirion locations are ISO 9001 and IATF 16949 certified, except Debrecen in Hungary, to ensure the highest quality management standards. Our location in Stäfa, Switzerland, is accredited according to the ISO 17025 standard for the testing and calibration of our temperature measurements.

Quality policy

Our strategy is to maintain a zero-tolerance-for-defects policy, and our number one priority is to ensure customer satisfaction. This is what shapes our corporate philosophy and code of conduct, which is why we regularly monitor, evaluate and take measures to improve customer satisfaction. Here, we rely on specific processes and instruments that constantly undergo further development. We regularly monitor, evaluate and improve the quality of our products and services. Accordingly, we carefully select our suppliers and also audit the major ones at regular intervals.

Awards

We are proud of our achievements. Great Place to Work named us the “Number two employer in Switzerland in the ‘large companies’ category” and gave us the “Special prize for Bold Leadership in the Corona crisis”. We also received a “Top Company” seal from kununu, as well as the “Jiutin Employee Award” for SAS China, presented by the local Chinese municipality.



CDP – the world's leading environmental data platform

CDP is a global non-profit organization and the world's leading platform for environmental reporting and disclosure. David Lammers, Deputy Director for Corporate Engagement at CDP Europe: “By disclosing its environmental reporting data to CDP in 2021, Sensirion Holding AG has demonstrated a commitment to corporate environmental transparency and made an important contribution to an economy that works for both people and planet.”

