

European Trade News

Intelligent Measuring Sensors

Teaching Computers to See, Smell or Sense

It is the innovative approach, the new way of thinking which makes the difference with inventors. The Zurich-based Sensirion AG is an excellent example for this new, unprecedented way of thinking: embarking on the idea to combine computer chips and sensor technology Sensirion has come up with a revolutionary innovation: sensors and electronics – all on one chip.

Originally founded in 1998 under the name of Alpha Sensors and renamed into Sensirion AG this year, the Swiss enterprise is a fast-growing start-up company which has won a number of prizes for its revolutionary new products providing computer chips with the features and characteristics of sensors. For example, Sensirion has been granted the first prize at the business plan competition “Venture 98”, organised by McKinsey and ETH Zurich or this year’s Technologie Standort Schweiz’award, a Swiss government award for leading technology and top market potential.

Combining sensors and electronics

“Our success is based on our 100 man-years of intensive research into novel sensor technologies”, says Vice President Sales, in his talk to our magazine. Founded by Dr. Felix Mayer and Dr. Moritz Lechner, the company started out to develop smart sensors combining both highest reliability and performance at lowest price. In order to achieve this goal, the proven scientists united a team of qualified experts for research and development in close cooperation with strong and experienced business partners.

Together, they succeeded in implementing sensor technologies in standard CMOS lines, the standard technology for integrated circuits. The combination of sensors and electronics, i.e. computer chips, has resulted in intelligent measuring devices of exceptional precision. By using CMOS standard, Sensirion provides an advanced and highly cost-effective solution for a wide variety of applications e.g. process technology, building control, medical applications such as the control of lung functions, HVAC, regulation of humidity or gas, to name but a few.

A range of intelligent sensor solutions

Sensirion offers a range of innovative sensor solutions including sensors for measuring mass-flow, differential pressure, temperature and relative humidity of air and gases.

With a team of highly qualified employees experienced in development and implementation of chip and electronic design, software and packaging, Sensirion provides advanced solutions which are targeted above all at OEM customers with low- and high-end applications. All sensors are fully calibrated and have standard digital, linear output signals (RS232 or SPI). Yet another unique feature, all sensors are equipped with temperature measurement capabilities, partially including temperature compensation which can be used for high precision applications.

“Both the mass flow sensor ASF1400 with its enormous measuring range of five decades of air flow at a maximum resolution of 3mm³ per minute and the humidity and temperature sensor AH31, with extremely low power consumption (<5mW) and

fast response times (5 to 10s) can now be delivered in sample quantities” says Urs Sachs. Furthermore, evaluation kits are available including ready-to-use cable and PC software.

Enormous market potential

With its high-performance, low-cost sensor solutions Sensirion is opening up an enormous market with a potential estimated at 45 billion SFr world-wide and an annual growth of about 6%.

Advanced performance along with minimum system cost and reduced time-to-market are convincing sales arguments, indeed, and Sensirion expects rapidly increasing demand in the near future. In order to cope with this demand, the company has forged strategic partnerships with well proven experts for wafer manufacture and assembly. Calibration and final testing procedures will be carried out at the Sensirion facilities in accordance with strictest quality standards to ensure optimum performance and reliability. Sensirion expects to start series production by summer this year.

Although the current focus is on mass flow, differential pressure and humidity sensor systems, Sensirion is determined to extend the outstanding concept to new applications. Indeed, new products and sensor systems are already being discussed and may revolutionise other fields, too.