

Technology News

Switzerland's Sensirion AG, winner of Venture 1998, is set to begin series-production and delivery of revolutionary new devices to measure flow, pressure differentials, and the humidity and temperature of gases. According to Sensirion's Vice President of Sales, Mr. Urs Sachs, the breakthrough sensors build on more than 200 man-years of research and development of chip and electronic design, software and packaging.

Switzerland's Sensirion AG Announces Next-Generation Sensors

Recently announced to the market at this year's *Hannover Messe*, Sensirion is overwhelmed by hundreds of inquiries about the new sensors. According to Mr. Sachs, the range of applications for the new sensors is virtually endless given their ability to measure extremely small quantities with exceptional resolutions and speed. The sensors have sparked a firestorm of interest from potential customers in industries as varied as HVAC, automobiles, medical technology and energy, to name but a few.

Leading the way amongst the new sensors is the **ASF1400**, a next-generation mass flow sensor in which a micro-machined silicon sensor element is seamlessly coupled to an amplification stage and an analog-to-digital converter. By combining both the sensor and the electronics on a single chip and implementing the design using the cost-effective CMOS standard, Sensirion's ASF1400 delivers an extremely compact but powerful system solution. The sensor is equipped with temperature measurement capabilities – a feature exclusive to all the devices in this new sensor family – and includes temperature compensation features. Like all the sensors in the line-up, the ASF1400 is fully calibrated and offers digital linear output signals (RS232 or SPI) as a standard feature.

Just how sensitive is the ASF1400?

"Sensitive enough to measure the breath of an ant," smiles Urs Sachs, who is also quick to emphasize that the main purpose of the sensor lies in other fields. No wonder: With its superior dynamic range, the ASF1400 spans five decades of air flow (0.01 to 400sccm) and offers response times as fast as 10 ms at an amazingly low estimated cost.

Sensirion uses the same single-chip technology to make the measurement of relative humidity as simple as breathing. New here is the **AH31**, a single chip, fully calibrated humidity sensor with SPI-compliant digital output. Smaller than the size of a fingernail, the surface-mountable sensor is designed primarily for high volume, cost-sensitive applications in climate control, process and office automation, or data logging applications. Low power consumption (<5mW) also makes the sensor ideal for portable devices and consumer applications. In a feature unique to relative humidity sensors, the AH31 provides highly accurate info about ambient temperatures.

The focus of these new sensors is by no means limited to mass flow and humidity sensor systems. Sensirion has used the sensitivity of the ASF1400 to create a new kind of differential pressure sensor called the ASP1400. Unlike static systems, which

arte plagued by offset problems as their membranes age, the ASP1400 uses a dynamic measurement principle based on the ASF1400's sensitivity to measure smallest amounts of air flow with exceptional accuracy and with no signal drift.

Sensirion's outstanding concepts together with the accumulated technology will without any doubt lead to multiple new operating fields. According to Urs Sachs, Sensirion expects to begin series production and delivery of these new sensors by the time this issue of TNI goes to press in mid-June. Samples and demo kits for OEM customers are also available.

Readers interested in learning more are encouraged to visit Sensirion on the World Wide Web at www.sensirion.com. More information is also available on request.

Photo left: The ASF1400 is a next-generation mass flow sensor in which a micro-machined silicon sensor element is seamlessly coupled to an amplification stage and an analog-to-digital converter. By combining both the sensor and the electronics on a single chip and implementing the design using the cost-effective CMOS standard, Sensirion's ASF1400 delivers an extremely compact but powerful system solution.