

Asahi Kasei
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Senseair launches next-generation CO₂ sensor featuring 75% smaller size and SMD-solderability for demand-controlled HVAC systems

Tokyo – January 13, 2026 – Senseair, Swedish subsidiary of Asahi Kasei Microdevices, has developed the “S12 CO₂” as a next-generation CO₂ sensor for demand-controlled ventilation (DCV) in zero-energy buildings and battery-powered indoor air quality (IAQ) monitoring. The new model is approximately 75% smaller in volume than its predecessors and can be used as a surface-mount device (SMD) on circuit boards while maintaining high accuracy and low power consumption. This enables sensor integration in applications where installation was previously difficult. Senseair has already begun sample distribution and plans to initiate mass production in 2026.

In recent years, legal frameworks to enhance the energy efficiency of buildings have become stricter worldwide. Particularly within the EU, the [Energy Performance of Buildings Directive](#) adopted in 2024 requires new buildings to comply with the zero-emission standard. These buildings have very low energy needs, which are largely covered by onsite and nearby renewable energy sources. This legislation will come into effect for new public buildings by 2028 and for all other new buildings by 2030.

To contribute to achieving this zero-emission level for buildings, intelligent DCV systems are emerging as a highly effective alternative to conventional temperature-controlled ventilation. DCV systems automatically adjust the ventilation based on CO₂ levels, thus enabling both reduction in energy consumption and comfortable IAQ. However, DCV systems require the installation of CO₂ sensors across the entire building, and constraints in design and installation space have so far proved to be major challenges.

Senseair’s new “S12 CO₂” sensor features a redesigned structure based on the company’s NDIR (non-dispersive infrared absorption) sensor technology. With a measurement range of 400 – 10,000 ppm and an accuracy of +/- (30 ppm + 3% of reading), the new sensor maintains the performance of its predecessor CO₂ sensors, “Sunrise” and “Sunlight,” but comes with a significantly smaller packaging size of 18 mm × 15 mm × 7 mm. This compact size enables the effective use of available space. It enables SMD reflow surface mounting on circuit boards, offering a discreet and elegant installation in air conditioning equipment or wall-mounted monitors without compromising design aesthetics.

Compliant with global building standards

For the retrofit market, where cable installation is often challenging, the Senseair “S12 CO₂” sensor offers the same ultra-low power consumption as the “Sunrise” and “Sunlight” sensors. Its energy efficiency, SMD-solderable design, and compact size enable sleek, battery-powered CO₂ monitors that allow easy installation with a wide degree of freedom.

The “S12 CO₂” sensor will be deployed for IAQ monitoring in building energy management systems (BEMS) within office buildings and commercial facilities, primarily in Europe, North America, and Asia. Further application fields include air conditioning units and heat exchangers in the residential sector.

Like its predecessors, the “S12 CO₂” sensor will comply with globally recognized standards, including ANSI/ASHRAE Standard 62.1-2022 Addendum d, RESET Grade B, and WELL Building Standard® (WELL v2™), ensuring worldwide relevance and impact.

About Senseair

Senseair is a gas sensor manufacturer specializing in CO₂, alcohol, and refrigerants. With over 30 years of experience of NDIR technology, Senseair has become a market leader within the field. Headquartered in Delsbo, Sweden, Senseair has been part of the Asahi Kasei Group since 2018.

About Asahi Kasei Microdevices Corporation (AKM)

AKM, a Japan-based company, operates an electronic components business as a member of the Asahi Kasei Group’s Material sector. AKM provides customers with unique products by combining the compound semiconductor technology used in magnetic sensors with the ASIC/analog circuit technology used in silicon semiconductors. AKM’s unique products and solutions are featured across a wide range of markets, including mobile communication devices and consumer products, as well as automotive electronics devices, household equipment, and industrial equipment. Additional information is available at <https://www.akm.com/global/en/>.

About Asahi Kasei

The Asahi Kasei Group contributes to life and living for people around the world. Since its foundation in 1922 with ammonia and cellulose fiber business, Asahi Kasei has consistently grown through the proactive transformation of its business portfolio to meet the evolving needs of every age. With more than 50,000 employees worldwide, the company contributes to sustainable society by providing solutions to the world’s challenges through its three business sectors of Healthcare, Homes, and Material. For more information, visit <https://www.asahi-kasei.com/>.

Asahi Kasei is also dedicated to sustainability initiatives and is contributing to reaching a carbon neutral society by 2050. To learn more, visit <https://www.asahi-kasei.com/sustainability/>.

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