E+E

your partner
in sensor
technology.

Long-term Stable Sensors for Agriculture

www.epluse.com/agriculture

Engineered for Those Who Feed the Planet

In modern agricultural technology, precise and robust sensor solutions are essential – whether for consistent product quality in ripening chambers, optimal air distribution in greenhouses, or animal welfare-compliant climate control in livestock housing. E+E Elektronik offers durable sensors for temperature, humidity, dew point, CO_2, differential pressure and air velocity – designed for operation in harsh environments

E+E Elektronik stands for long-term stable all-in-one sensors for optimal climate control in agriculture.

1 Mushroom Cultivation

Precise climate measurement for better mushroom cultivation.

2 Stables & Hatchers

Precise climate control for healthier animals and more efficiency.

3 Storage & Ripening

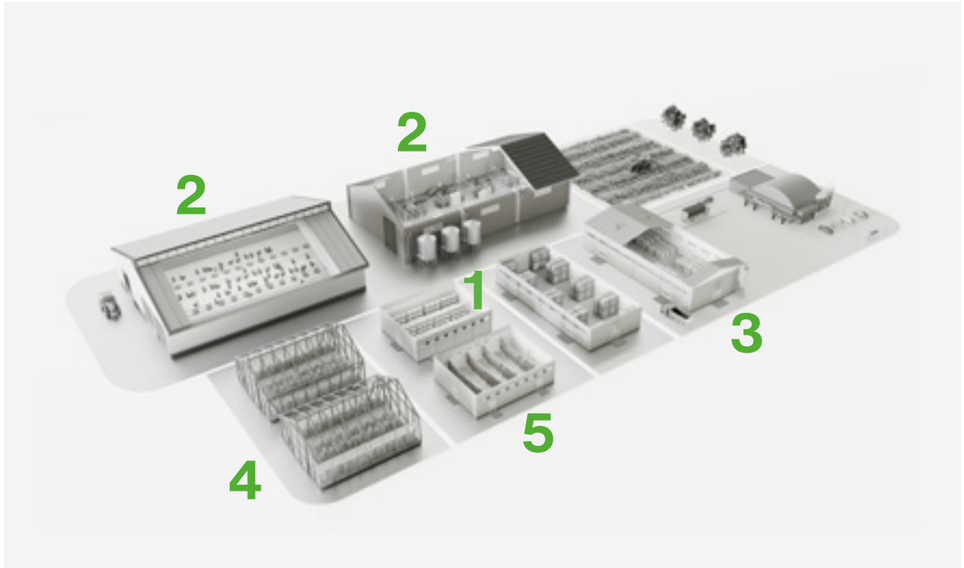
Consistent quality through precise climate control during storage and ripening.

4 Greenhouse

Precise climate control for maximum efficiency in greenhouses.

5 Tobacco

Long-term stable sensor solutions for efficient tobacco drying.



Sensors in Agriculture

For over 40 years, E+E Elektronik has been a reliable partner in precise climate and environmental measurement – from sensitive CO_2 control in mushroom cultivation to robust humidity measurement in livestock housing and greenhouses. This specialised application knowledge is not only reflected in product development but also in our personal consultation: we think ahead, understand real-world processes, and provide technical support whenever it's needed.
This enables E+E Elektronik to offer practical, application-oriented solutions wherever specialised expertise coupled with the highest quality is required.

Your advantages:

- Up to 30 % energy savings through precise climate regulation
- Animal welfare-compliant conditions to improve health and performance
- All-in-one sensors for multiple measurands – all in a single device
- Fast integration thanks to standardised interfaces

Mushroom Cultivation

In professional mushroom cultivation, optimal climate control is essential for growth, yield, and quality. Continuous high humidity, large temperature fluctuations, aggressive cleaning, and organic contamination all place extreme stresses on the sensors in the operation.

E+E Elektronik provides robust and long-term stable sensor solutions for temperature, humidity, CO_2, differential pressure and air velocity. These have been specifically developed for continuous operation in mushroom cultivation. Innovative sensor protection prevents measurement drift caused by biofilm or condensate.

Stables & Hatchers

Whether in incubators or livestock housing – precise control of temperature, CO_2 and humidity is essential for animal welfare, development, and overall product quality. Fluctuations or inaccurate readings can lead to unnecessary stress, growth disorders, or increased mortality rates. Sensor solutions from E+E Elektronik enable long-term stable and accurate climate control across all phases of the animal's life from incubation and hatching to rearing and housing. Robust enclosures, compact designs, and easy system integration make them ideal for use in demanding agricultural applications. This includes environments with aggressive cleaning procedures and continuous high humidity.

Storage & Ripening

Controlling the temperature, humidity, and CO_2 in agricultural storage is crucial for preserving the quality, shelf life, and value of the products. Proper storage of fruits, vegetables, and grains requires proper humidity levels and introduction of chemicals. Sensors exposed to these conditions risk condensation and other stresses, which reduce reliability over time.
E+E Elektronik manufactures robust and long-term stable sensor solutions to accurately measure the most important climate parameters. These sensors maintain reliability even in demanding conditions with extremely high relative humidity or chemical exposure.

Greenhouse

Modern greenhouse operations face complex challenges. Precise climate control is essential to ensure high yields, top plant quality, and low operating costs. At the same time, high humidity, temperature fluctuations, chemical exposure, and dirt place heavy demands on the sensors in use. E+E Elektronik provides robust, long-term stable sensor solutions for temperature, humidity, and CO_2.optimised. These sensors are optimised for use in greenhouses of all technological complexity.

Tobacco

In industrial tobacco processing, drying plays a key role. It has a decisive impact on the quality, aroma, and shelf life of the final product. Whether in controlled air-curing environments or in thermal processes such as bed drying, precise climate control is essential.

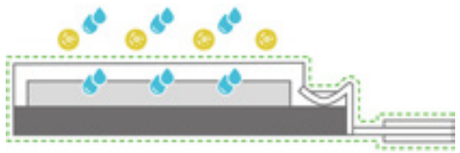
Temperature, humidity, and airflow must be continuously monitored and accurately regulated to ensure uniform drying and minimise product loss.

Intelligent sensor protection

Humidity, dust, ammonia - agricultural processes do not take place in a laboratory and are characterised by variable conditions. The sensors used must operate with precision under the harshest conditions, without any loss of measurement accuracy.

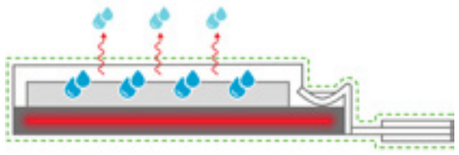
Mushroom substrate, biofilm, dust, vapour or even H_2O_2 sterilisation must not impair sensor performance in order to ensure a stable cultivation process. Sensors must also function flawlessly during cleaning cycles with disinfectants, in environments with high dust levels, or under strong chemical exposure from animal excreta.

E+E relies on robust and intelligent protection concepts such as:

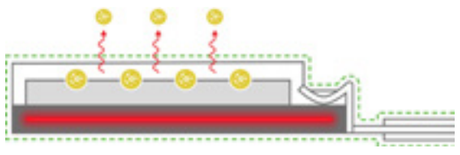


E+E Sensor-Coating: Developed by E+E Elektronik, this proprietary protective layer is applied to the active surface of the sensing element. It extends the sensor's lifetime and further improves long-term stability in demanding, dusty or contaminated environments.

Innovative sensor encapsulation in the connection area: This technology provides highly effective protection against the ingress of dirt and dust – particularly at the connection interface. In combination with the E+E sensor coating, the encapsulation (potting) ensures optimum protection even under extreme operating conditions.



Integrated sensor heating (High Humidity Guard): By continuously, precisely heating the sensing element and the probe body, condensation is effectively prevented in applications with permanently high humidity. This extends sensor service life and long-term stability while reducing maintenance requirements.



Automatic Sensor ReCovery (ARC) for chemical contamination: This function ensures long-term stable measurements, even under chemical contamination. During regeneration, the sensing element is heated intensely to remove deposits and effectively prevent potential measurement drift.

Sensor Solutions

HTS401

Modular Humidity and Temperature Sensor for Demanding Climate Control

- Reliable in Any Environment
- Automatic ReCovery (ARC)
- Condensation Guard (CG)
- RH / T accuracy up to ±0.95 %RH and +/- 0.1 °C (0.18 °F)
- RapidX - intelligent, interchangeable probe

EE872

Modular Probe for CO_2, Humidity, Temperature and Ambient Pressure

- 4 in 1: CO_2, RH, T and p measurement
- Heated versions for high humidity, condensing conditions
- Dual wavelength NDIR CO_2 measuring principle
- CO_2 measuring range up to 50,000 ppm
- T and p compensation with on-board sensors
- Replaceable sensing module

EE610

Low Differential Pressure Sensor

- Configurable and adjustable
- Multi-range (analogue output)
- High accuracy (±0.5 Pa)
- Knockout for ½" conduit fitting (US)
- Replaceable sensing module

Calibrating your Limits

Sensors for agricultural applications are crucial to ensuring precise control of climate parameters - a key factor for product quality and animal-welfare-compliant housing. For quality-critical applications, regular calibration with traceable certificates is essential. E+E Elektronik supplies these calibration certificates with the sensors upon delivery, issued by its accredited in-house laboratory.

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