dol SENSORS

Climate sensors

Control the growing environment to optimize plant growth

dol SENSORS

Accurate Climate Sensors

Sensors for automatic climate regulation

Growing crops in a controlled environment has many benefits, including the ability to grow crops year-round, increased crop yields, and reduced water and pesticide use.

However, one of the challenges of vertical farming and cultivating in greenhouses in general is the need to carefully control the growing environment in order to optimize and secure plant growth.

Climate sensors play a crucial role in maintaining the optimal growing environment in greenhouses. These sensors can measure a variety of factors, including temperature, humidity, CO2 levels, ammonia levels and light intensity.

By constantly monitoring these factors, growers can make adjustments to the growing environment as needed to ensure that plants receive the optimal conditions for growth. Furthermore, collecting the data and comparing it over time makes it possible to spot trends in the data and identify an issue before it becomes a problem for the crop.

dol-sensors manufactures both single-function and multifunction climate sensors for monitoring:

- Temperature
- Humidity
- CO2
- Ammonia
- Light

All sensors from dol-sensors are accurate and robust. They are well-tested and have long service lifes as they are originally designed for the harsh environment in livestock houses and in greenhouses, where high humidity, high levels of ammonia, as well as temperature swings are constantly affecting the sensors.

DOL 114 Humidity and Temperature Sensor

Humidity and Temperature

DOL 104 Humidity Sensor

The DOL 104 is a high-precision sensor for measuring relative humidity designed for use in harsh environments. The sensor has an analogue output with a very low output resistance and full protection against short circuits and wiring failures.

The special sensor element and the built-in filter enable application in environments like greenhouses with high humidity.

A microprocessor controls the sensor and has a two-colour light emitting diode (LED) for communication of operation status and error diagnostics.

A protective cap is available, eliminating the need to remove the sensor when cleaning the greenhouse. DOL 104 is available in various output versions, such as 0-5V, 0-10V, and 4-20mA.

Read more about DOL 104 Humidity Sensor here.

DOL 114 Humidity and Temperature Sensor (2-in-1 Sensor)

The DOL 114 is a high-precision **2-in-1 sensor** for measuring both relative humidity and temperature simultaneously. Combined with a climate control system, DOL 114 help keeping a more consistant environment with no extreme temperature swings or too high humidity levels.

Due to its robust design, the sensor is well suited for a number of industrial applications where temperature swings and high humidity are present factors.

The sensor has the same excellent properties as the DOL 104 digital humidity sensor. Like DOL 104, the DOL 114 sensor is available in various output versions, such as 0-5V, 0-10V, and 4-20mA.

Read more about DOL 114 Humidity and Temperature Sensor here.

Temperature

DOL 112 Temperature Sensor

DOL 112 is a simple cost-effective temperature sensor that comes in three different versions; PT100, PT1000 and NTC.

The sensor is robust standard temperature sensor with the high quality known from other dol-sensors' sensor solutions. Thus, DOL 112 is well suited for use in environments where a sturdy design is required.

The temperature sensor can operate in temperatures between -40 and +100 °C and can be used for measuring both inside and outside temperatures.

DOL 112 is IP 68 protected, which means that it is dust tight and has total protection against water ingress, up to and including complete submersion below one meter and for more than 30 minutes.

In accuracy, the DOL 112 PT100 and PT1000 stands out with a precision of ±0.5 °C. The NTC comes in a 1K version with an accuracy of 3% at 25°C and a 10K version with an accuracy of 1% at 25°C.

Read more about DOL 112 Temperature Sensor here.

DOL 115 Temperature Sensor

DOL 115 is a precision sensor for temperature measurement which comes with a 2-meter cable. It is intended for use in livestock houses but is also well suited for a number of industrial applications.

The sensor features two analogue outputs with very low output resistances and full protection against short-circuits and wiring failures.

DOL 115 temperature sensor is microprocessor-controlled and has a two-color light emitting diode (LED) to communicate the operation status and the error diagnostic.

Read more about DOL 115 Temperature Sensor here.

Humidity, Temperature, and CO_2

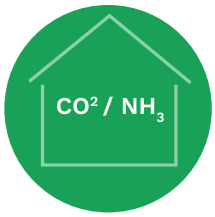
DOL 139 Humidity, Temperature, and CO_2 Sensor (3-in-1 Sensor)

DOL 139 is a smart **3-in-1 sensor** combining measurement of both relative humidity, temperature, and carbon dioxide (CO_2). Since DOL 139 measures 3 important elements of the environment it makes for an easier installation, less maintenance and a more cost-effective solution.

No need for multiple sensors when you can use a single sensor to measure 3 elements!

DOL 139 is protected by a sturdy casing and behind a carefully selected filter. It is supplied with a protection cap for protection of the sensor during washing and disinfection, even during high-pressure cleaning.

Read more about DOL 139 Humidity, Temperature, and CO_2 Sensor here.



CO_2

DOL 119 CO_2 Sensor

DOL 119 is a new generation innovative CO_2 sensor with an IP67 protection rating. It withstands a harsh environment and doesn't have to be taken down during high pressure cleaning if protection cap is applied.

Exposure of plants to lower levels of CO_2 even for a short period can reduce rate of photosynthesis and plant growth. Thus, monitoring and collecting data about the CO_2 level is vital to the plant growth.

Read more about DOL 119 CO_2 Sensor here.

Ammonia

DOL 51 Ammonia Sensor for applications with high air humidity

DOL 51 is an ammonia sensor designed to continuous measurement of ammonia (NH3) concentration. The sensor is specially designed to measure ammonia levels in applications with high air humidity (RH above 95%). Thus, DOL 51 is e.g. applicable in the water tanks in aquaponic systems in vertical farming, to ensure the right level of ammonia in the water.

Read more about DOL 51 Ammonia Sensor here.

DOL 53 Ammonia Sensor

The award winning DOL 53 is a sensor designed to continuous measurement of ammonia (NH3) concentration.

The DOL 53 features accurate ammonia measurements in both low and high concentrations, negligible cross sensitivity to other gasses and a long lifetime, without the need for calibration. The DOL 53 measures ammonia concentrations from 1.5 to 100 ppm, with an output range of 0 to 10V in RH up to 95%.

Read more about DOL 53 Ammonia Sensor here.

Light

DOL 16 Light Sensor

The DOL 16 is a sensor designed to measure light intensity in terms of lux. It has been developed to handle harsh environments, which provides it with a long service life.

The light intensity or illuminance is an important factor in optimizing the plant growth. An active control of light intensity by use of DOL 16 will help achieving high productivity while also saving energy. The DOL 16 sensor is available with various output ranges, ranging from 0-50 lux all the way up to 0-1000 lux.

Read more about DOL 16 Light Sensor here.

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