

# Capacitive

Capacitive sensors for automation of processes

CAPACITIVE



# Robust and Reliable Capacitive Sensors

We produce capacitive sensors for automated processes in feed and grain handling.

Our capacitive sensors are used for detecting solid and loose materials and for the automation of processes, where there is a need for controlled conveyance and storage of materials. The capacitive sensors ensure an efficient and seamless handling of grain and other feedstuffs, and can be used for handling wood, plastics, and other granular materials. Our large product range includes both smooth cylindrical sensors, threaded cylindrical sensors, and flat sensors.

- Detection of feed and grain in feed systems for livestock production
- Large range of functional, mechanical, and electrical variants to meet every need
- Designed for aggressive environments in livestock houses and industrial facilities
- CE, UL, CSA and ATEX approvals



DOL 26 Capacitive Sensor





# Capacitive

## iDOL 20 / DOL 20 Capacitive Sensor



DOL 20 is a flat sensor, which can be used to measure the level in hoppers, feed pans, silos, bins, or for control of poultry feed lines. DOL 20 can be mounted on the outside of a plastic or composite shell, since it can detect the level through this material. The sensor is extremely sturdy to error situations such as short circuits and overload and has a long lifetime even in harsh environments. The sensitivity of DOL 20 sensor can be fixed or adjustable using trimmers to match various types of feed. The sensitivity of iDOL 20 sensor can be adjusted using the SmartAdjust App.

[Read more about iDOL 20 / DOL 20 Capacitive Sensor here.](#)



## DOL 26 Capacitive Sensor

DOL 26 is a capacitive sensor for detecting loose and solid materials such as feed, plastic or wood pellets, grain, and bedding. The sensor can for example help ensure sufficient feed distribution in livestock houses or distribution of the right number of pellets in a pellet stove. Due to the mechanical design of DOL 26, the sensor is ideal for inclusion in small applications with limited space such as inside feed trough in poultry farms. In this way the sensor is kept away from the reach of the animal. DOL 26 is immune to EMI, short circuits, and any overload. No more burned off sensors due to installation mistakes!

[Read more about DOL 26 Capacitive Sensor here.](#)

## iDOL 27 / DOL 27 Capacitive Sensor



DOL 27 and iDOL 27 is a 30 mm capacitive sensor designed for detecting loose and solid materials. The sensors have highly unique functionalities for the agricultural and industrial industry. LED lights indicate status of the sensors. The DOL 27 and iDOL 27 capacitive sensors are immune to EMI, short circuits, and any overload which prevents sensors from burning off due to installation mistakes. The ON and/or OFF delay, MaxRunTimer, Make/Break contact, and sensitivity of the sensor can be fixed or adjusted using a trimmer or the SmartAdjust App to suit different motor control units.

[Read more about iDOL 27 / DOL 27 Capacitive Sensor here.](#)



# Capacitive

## iDOL 28 / DOL 28 Capacitive Relay Sensor



The DOL 28 and iDOL 28 sensors are unique 30 mm capacitive relay sensors for detection of feed, grain, and solids in a feeding system. The sensor features a built-in powerful relay with switch function. The sensor has a white LED for illuminating the feed pan. DOL 28 and iDOL 28 feed sensors are intended for feed pans in poultry production, where the light will ensure that the pan with the sensor gets attention from the birds. Which again ensures a stable feed supply. Two trimmers or the SmartAdjust App make it easy to change settings of product parameters.

[Read more about iDOL 28 / DOL 28 Capacitive Sensor here.](#)

## DOL 40 Series



The DOL 40 series comprises three models with different functionalities. The DOL 41 has no time delay, the DOL 43 has the option of delayed disconnection and the DOL 45 additionally has the option of delayed switchon. Two push button switches adjust the sensitivity of the sensor and the time with light diodes indicating when the switches are activated. The sensor is CE and C-UL approved and has a high immunity to noise from electric communication (i.e. from a mobile phone) and transients (i.e. from motors and contactors). This makes the sensors very reliable.

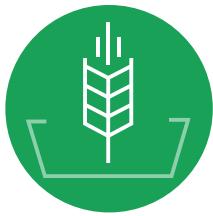
[Read more about the DOL 40 Series here.](#)

## iDOL 44 / DOL 44 Capacitive Sensor



DOL 44 is a complete range of 30 mm capacitive feed sensors with relay output. Settings are easily changed via two trimmers using a small screwdriver and with the SmartAdjust App for iDOL 44. DOL 44 has a high immunity to noise from electric communication (e.g. mobile phones) and transients (e.g. from motors and contactors). DOL 44 is available in a multitude of versions, such as the DOL 44RH with integrated heater for cold and/or high humidity applications, DOL 44RT for detection of feed in tubes and DOL 44R-33 with conical 32 mm enclosure.

[Read more about iDOL 44 / DOL 44 Capacitive Sensor here.](#)



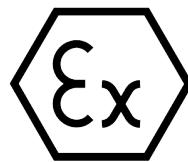
# Capacitive

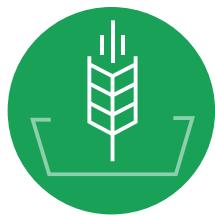
## iDOL 46 ATEX Approved Capacitive Sensor



The iDOL 46 ATEX sensor is approved according to ATEX directive 2014/34/ EU and IECEx for operation in potentially explosive dust atmospheres. The sensor is classified for explosion group II, which concerns all remaining risk areas but mines. iDOL 46 ATEX is classified as equipment for use in atmospheres with continuous presence of explosive dust with an ignition temperature above 85 °C. The ATEX approval makes the sensor suitable for installations where dust poses an imminent explosion risk classified according to Zone 20 and 21. iDOL 46 ATEX sensor has a robust design with plastic housing with 7 joule shock/impact test.

[Read more about iDOL 46 ATEX Capacitive Sensor here.](#)





# Accessories

dol-sensors offers a wide range of spare parts and accessories that facilitate mounting and servicing capacitive sensors.

## T-piece for mounting sensors on tubes



The T-bracket makes it easy to mount 30 mm sensors on plastic pipes in pipe systems where the sensor detects the material through the plastic wall of the pipe. The bracket is suitable for pipes with diameters between 40 and 60 mm.

## Plastic glands



The plastic gland can be mounted in a silo wall for example by means of an internal locknut or from the outside by means of the enclosed flange.

# Climate

Climate sensors to ensure comfort and productivity

CLIMATE



# Accurate Climate Sensors

Sensors for automatic climate regulation in livestock houses

Climate sensors are used in livestock houses to ensure proper animal welfare and to achieve high productivity by providing data for automatic climate regulation.

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

- Temperature
- Humidity
- CO<sub>2</sub>
- Ammonia
- Light
- Wind speed and wind direction



DOL 114 Humidity and Temperature Sensor





# Humidity / Temperature



## DOL 104 Humidity Sensor

The DOL 104 is a high-precision sensor for measuring relative humidity designed for use in livestock houses but is also well suited for a number of industrial applications. 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 livestock houses with constantly 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 livestock house.

[Read more about DOL 104 Humidity Sensor here.](#)



## DOL 114 Humidity and Temperature Sensor

The DOL 114 is a high-precision sensor for measuring both relative humidity and temperature simultaneously. It is used in livestock houses but is also well suited for a number of industrial applications.

The sensor has the same excellent properties as the DOL 104 digital humidity sensor. Like DOL 104, the DOL 114 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.](#)



# Humidity / Temperature

## DOL 139 Humidity, Temperature, and CO<sub>2</sub> Sensor

DOL 139 is a smart 3-in-1 sensor combining measurement of both relative humidity, temperature, and carbon dioxide (CO<sub>2</sub>). Since DOL 139 measures 3 important elements of the environment; humidity, temperature, and CO<sub>2</sub>, 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<sub>2</sub> Sensor here.](#)





# Temperature



## DOL 112-PT100 Temperature Sensor

DOL 112-PT100 is a simple cost-effective temperature sensor. The sensor is robust standard PT100 sensor with the high quality known from other dol-sensors' sensor solutions. Thus, DOL 112-PT100 is well suited for use in environments where a sturdy design is required.

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

DOL 112-PT100 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.

The sensor has an accuracy of +0.5 °C and comes with a 2-wire 1.4-meter Ø5 mm cable.

[Read more about DOL 112-PT100 Temperature Sensor here.](#)



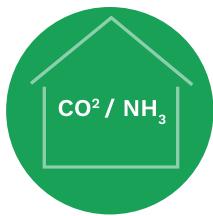
## DOL 112-PT1000 Temperature Sensor

DOL 112-PT1000 is a simple cost-effective temperature sensor.

The sensor is robust standard PT1000 sensor with the high quality known from other dol-sensors' sensor solutions. Thus, DOL 112-PT1000 is well suited for use in environments where a sturdy design is required.

The PT1000 temperature sensor has the same advantages as the DOL 112-PT100 Temperature Sensor.

[Read more about DOL 112-PT1000 Temperature Sensor here.](#)



# Gas

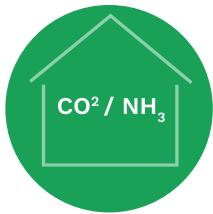
## DOL 53 Ammonia Sensor

The award winning DOL 53 is a sensor designed to continuous measurement of ammonia (NH3) concentration in livestock houses. The negative effects of high ammonia concentration in livestock production is well known, and with the introduction of the DOL 53 the farmer is now finally able to monitor the ammonia concentration continuously and take corrective actions if ammonia levels are increasing.

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 can be mounted directly in the livestock house, without any need for tubes or pumps. The DOL 53 measures ammonia concentrations from 1.5 to 100 ppm, with an output range of 0 to 10V.

[Read more about DOL 53 Ammonia Sensor here.](#)





# Gas



## DOL 119 CO<sub>2</sub> Sensor

DOL 119 is a new generation innovative CO<sub>2</sub> sensor with an IP67 protection rating. It withstands a harsh environment and doesn't have to be taken down during high pressure cleaning in animal houses. The sensor's measuring range is based on monitoring the comfort area of the animals and partly supervising fault conditions in livestock houses integrating direct combustion.

[Read more about DOL 119 CO<sub>2</sub> Sensor here.](#)



## DOL 51 Ammonia Sensor for Air Cleaning

The DOL 51 ammonia sensor is specifically designed for continuous measurement of ammonia (NH<sub>3</sub>). DOL 51's innovative design, where air is funnelled to the measuring inlet through a heated duct that prevents condensation, allows DOL 51 to operate under these conditions. The clean gas side of air cleaners is one such application where DOL 51 makes it possible to measure the remaining ammonia concentration after a passage of the filters. Data that is vital to documenting the cleanliness of the exhaust air. Combined with data from DOL 53 on the inlet side of the air cleaner, data from DOL 51 can be used to ensure that air cleaners run as efficiently as possible at the lowest possible cost of additives.

[Read more about DOL 51 Ammonia Sensor for Air Cleaning here.](#)



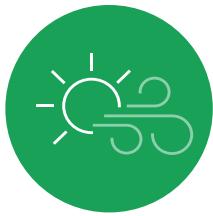
# Light

## 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 the harsh livestock environment, but is also well suited to a number of industrial applications. The light intensity or illuminance is an important factor in optimizing the growth of broilers and optimizing egg production by layers. 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.](#)





# Weather

## DOL 58 Weather Sensor



The DOL 58 measures wind direction, wind speed, and air pressure. Wind speed and direction are measured using ultrasound, which means the weather sensor has no moving parts. Eliminating the impellor and wind vane of typical weather sensor, allows the unique DOL 58 to be extremely robust, reliable and service-friendly. DOL 58 is available with 0-10V or 4-20mA outputs. A version with temperature output instead of air pressure is also available.

[Read more about DOL 58 Weather Sensor here.](#)

## DOL 111 Rain Detector



The DOL 58 measures wind direction, wind speed, and air pressure. Wind speed and direction are measured using ultrasound, which means the weather sensor has no moving parts. Eliminating the impellor and wind vane of typical weather sensor, allows the unique DOL 58 to be extremely robust, reliable and service-friendly. DOL 58 is available with 0-10V or 4-20mA outputs. A version with temperature output instead of air pressure is also available.

[Read more about DOL 111 Rain Detector here.](#)



# Pressure / Accessories



## DOL 18 Sub-Pressure Sensor

The DOL 18 sensor is used for very precise measurement of negative pressure. It is used primarily for measuring negative pressure in livestock houses and to trigger an alarm if the pressure is too low or too high, but it can also be used in other environments where there is a need for measuring negative pressure. DOL 18 is available with a wide selection of measuring ranges from 25Pa to 1250Pa, and with 0-5V, 0-10V, and 4-20mA outputs.

[Read more about DOL 18 Sub-Pressure Sensor here.](#)

## Accessories



Climate sensors are often used in livestock houses that are subject to regular cleaning. It is therefore important that the sensors can be easily dismounted and refitted. dol-sensors offers various plug systems to allow for an easy and service friendly installation.