

# Capacitive

Capacitive sensors for automation of processes

CAPACITIVE



# Robust and Realiable

We design and produce capacitive sensors for aggressive environments in livestock houses and industrial facilities.

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 sensors are designed to withstand harsh environments with high humidity levels, temperature swings, dust and high ammonia levels. In addition, our capacitive sensors are immune to EMI, short circuits, and any overload, which means that the risk of burning off due to installation mistakes is minimized.

The robust sensors ensure an efficient and seamless handling of grain and other feedstuffs, and can furthermore be used for handling wood, plastics, and other granular materials.

Our large product range includes both smooth, threaded, conical, and flat sensors. The sensors come in different variants for different output and function needs.

- Many different variant to meet different needs.
- Designed for aggressive environments in livestock houses and industrial facilities
- CE, UL, cUL, and ATEX approvals



DOL 26 Small Capacitive Proximity Sensor





20-280V AC/DC 500mA  
CAP 4M84HF-CASCH-B-21  
www.doel-sensors.com  
doel SENSORS  
Hedelund 4, DK-7870 Roslev



# Sensors with NFC

With our iDOL capacitive sensors, you can adjust your sensors with the SmartAdjust App on your smartphone

With the SmartAdjust App you can copy settings to multiple sensors and thus adjust all your sensors at once prior to installation. There is no need for powering the sensors before adjusting them with the app. Stay in the comfort of the office or van and prepare all the sensors before installing them.

Save time on installation in a single or multiple houses as you can save configuration settings for later or share them with others.

Adjusting the sensors is more accurate with the SmartAdjust App than with traditional adjustment with screwdriver, as you can see the configurations directly in the app. This way, the sensor readings are more accurately comparable between sensors, as you can be sure that all sensors are adjusted the same.

- Adjust all sensors prior to installation
- Do more with one sensor making it more flexible than any other sensor
- Copy settings to multiple sensors
- Share sensor configurations with others





## DOL 20 Flat Capacitive Sensor

DOL 20 is a flat sensor, which can be used to measure the level in hoppers, feed pans, silos, and bins. DOL 20 can be mounted on the outside of a plastic or composite shell, due to its flat design and since it can detect the level through this material. To match various types of feed, the sensitivity of DOL 20 sensor can be fixed or adjustable using trimmers. The sensitivity of iDOL 20 sensor can be adjusted using the SmartAdjust App.

**[Read more about DOL 20 here.](#)**



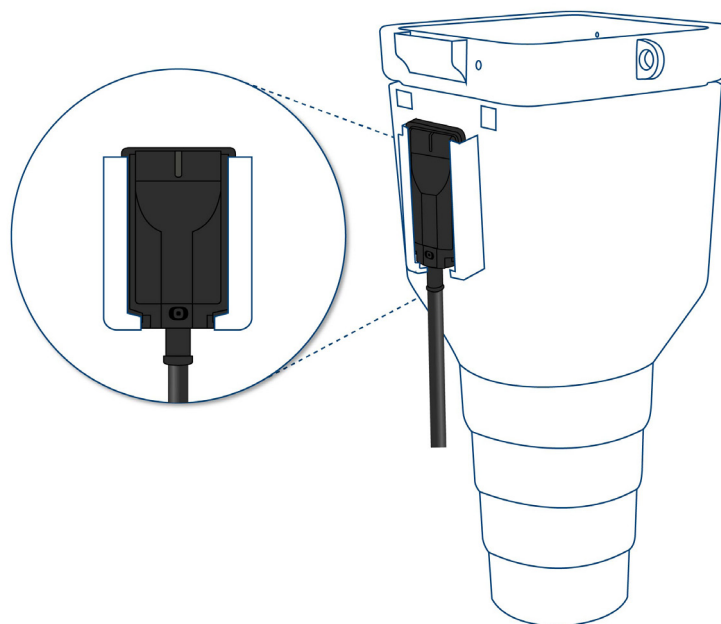
## Variants



DOL 20 SCR



iDOL 20 SCR



Example of mounting of DOL 20 in drop tube

## DOL 26 Small Capacitive Sensor

DOL 26 is a small 18mm capacitive sensor for detecting loose and solid materials such as feed, plastic or wood pellets, and grain. Due to the mechanical design of DOL 26, the sensor is ideal for inclusion in small applications with limited space such as inside feed pans in poultry houses. In this way the sensor is kept away from the reach of the animal.

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



## Variants



DOL 26 Threaded



DOL 26 Smooth



iDOL 26 Smooth



iDOL 26 Threaded



DOL 26 Cable return  
threaded



DOL 26 Cable return  
Smooth



iDOL 26 Cable return  
Threaded



iDOL 26 Cable return  
Smooth

## DOL 27 Capacitive Sensor

DOL 27 is a 30 mm capacitive sensor with LED lights indicating status of the sensor. The sensor has very low power consumption in off state, enabling the possibility for sensors working in parallel on the same contactor. This gives the sensors a unique possibility for controlling cross auger systems.

The ON and/or OFF delay, MaxRunTimer, Make/Break contact, and sensitivity of the sensor can be fixed or adjusted using two trimmers or the SmartAdjust App to suit different motor control units.



**[Read more about DOL 27 here.](#)**

## Variants



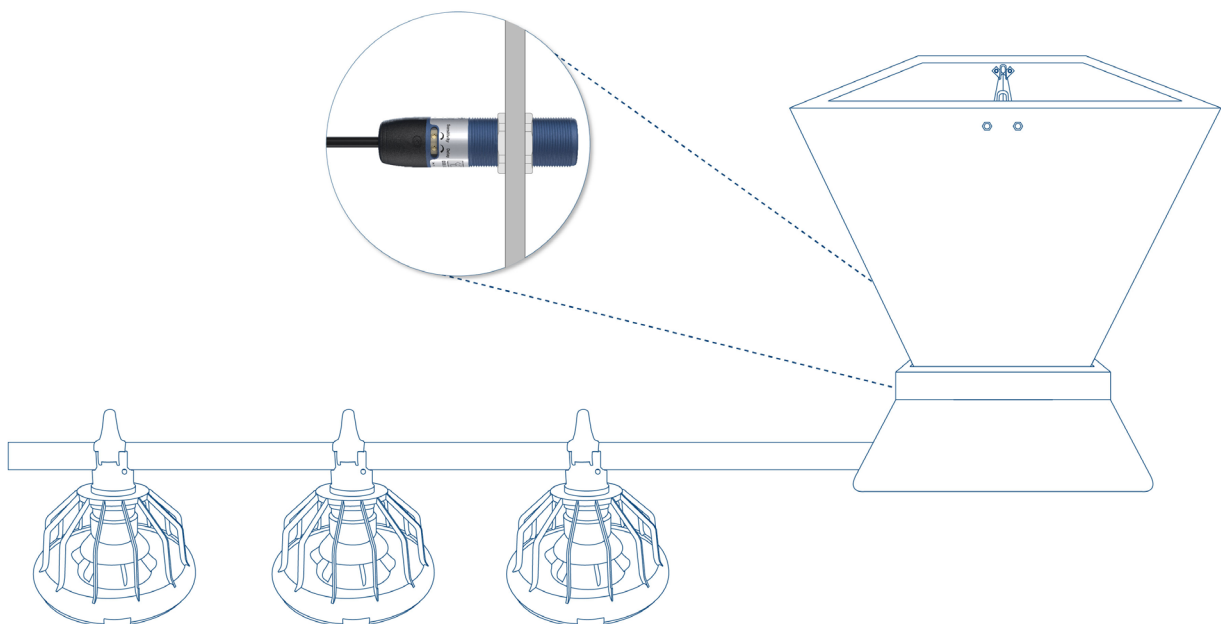
DOL 27 Threaded



iDOL 27 Smooth



iDOL 27 Threaded



Example of DOL 27 mounted in a hopper



## DOL 28 Capacitive Relay Sensor with Light

The DOL 28 Capacitive relay sensor is a unique 30 mm sensor. The sensor has a white LED for illuminating the feed pan.

DOL 28 is intended for feed pans in poultry production, where the light will ensure that the pan with the sensor gets attention from the birds. It is recommended to place the sensor on the feed pan farthest from the hopper to ensure a stable feed supply.

**[Read more about DOL 28 here.](#)**



## Variants



DOL 28 Threaded



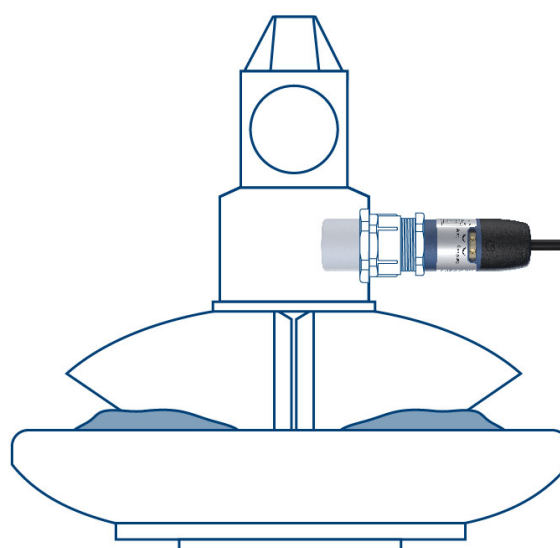
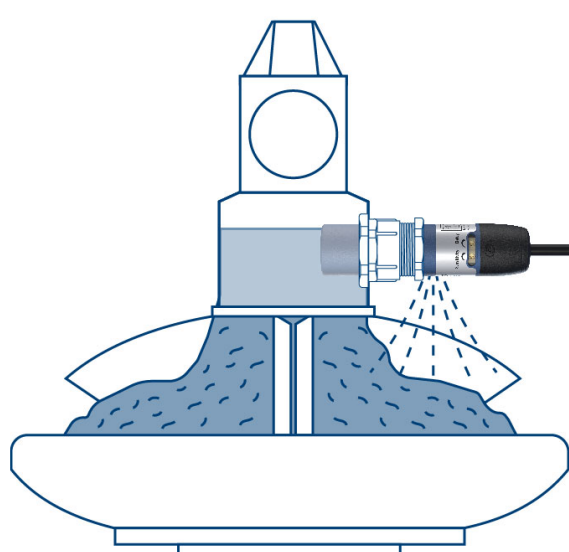
iDOL 28 Threaded



DOL 28 Smooth



iDOL 28 Smooth



Example of DOL 28 mounted in a feedpan

# Mounting on pipes

With our specially designed T-piece you can easily mount your 30 mm capacitive sensors on a pipe.

We know that installing sensors on a pipe can be a bit tricky, which is why we designed our T-piece. The T-piece is made of flexible plastic to make it easier to fit on pipes between 40 and 60 mm. Furthermore, since there are no metal parts on the T-piece, it lasts longer and there is no risk of rust.

The T-piece is designed for sensors mounting on plastic pipes with conveying system using only the T-piece and three zip ties which means that no screws are required.

Simply place the T-piece around the pipe on the desired place and tie it with two zip ties. Put the sensor inside the T-piece and secure it with a zip tie.

All sensor controls on DOL sensors remain fully accessible when installed in the T-piece, which means that the sensors can be adjusted without removing them.

You can use the T-piece with any standard 30 mm sensors and these DOL sensors with smooth housing:

- iDOL 27 Capacitive Sensor
- DOL 28 Capacitive Relay Sensor with Light
- iDOL 28 Capacitive Relay Sensor with Light
- DOL 44 Capacitive Relay Sensor
- iDOL 44 Capacitive Relay Sensor
- DOL 45 Capacitive Relay Sensor
- iDOL 46 ATEX Capacitive Relay Sensor

## T-Piece Easy Tube Mounting



[Watch the video on our YouTube channel](#)



## DOL 41 Capacitive Relay Sensor

The DOL 41 is a capacitive relay sensor with no time delay. The relay switches as soon as the sensor is activated and remains in this position until the activating influence stops. Two push buttons adjust the sensitivity of the sensor. 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 41 here.](#)**



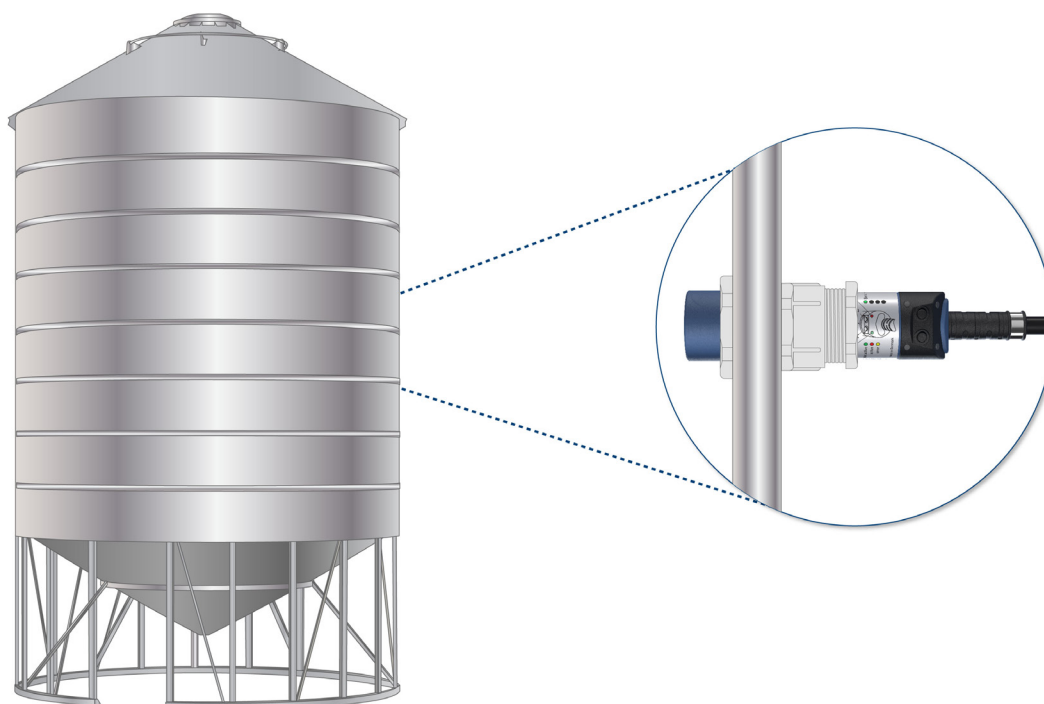
## Variants



DOL 41 Threaded



DOL 41 Smooth



Example of DOL 41 mounted in a silo with the included plastic gland



## DOL 43 Capacitive Relay Sensor

The DOL 43 is a capacitive relay sensor with an option for delayed switch-off and management of the delay length. When the activation stops, the time delay starts. When this delay expires, the relay switches back.

Two push buttons adjust the sensitivity of the sensor.

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 43 here.](#)**



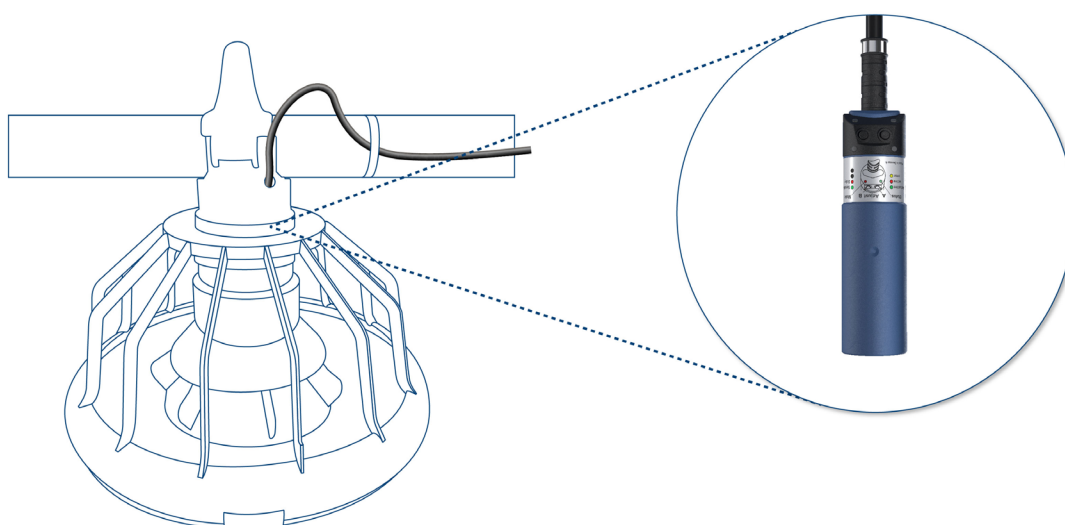
## Variants



DOL 43 Threaded



DOL 43 Smooth



Example of DOL 43 mounted inside a feed pan

## DOL 44 Capacitive Relay 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 to avoid condensation, DOL 44RT for detection of feed in tubes and DOL 44R-33 with conical 32 mm enclosure.



**Read more about DOL 44 here.**

## Variants



DOL 44 Smooth  
Universal Voltage



DOL 44 Threaded  
Universal voltage



iDOL 44 Smooth  
Universal Voltage



iDOL 44 Threaded  
Universal voltage



DOL 44 Smooth  
Low or High Voltage



DOL 44 Threaded  
Low or High voltage



DOL 44 Smooth  
Conical



iDOL 44 Smooth  
Conical



DOL 44 Smooth  
Universal Voltage  
with T-piece



iDOL 44 Smooth  
Universal Voltage  
with T-piece



DOL 44 Smooth  
Low or High Voltage  
with T-piece

## DOL 45 Capacitive Relay Sensor

The DOL 45 is a capacitive relay sensor that can be set up with no time delay, with delayed switch-off or switch-on, and management for delay length. The time delay will start when the sensor is activated (switch-on delay) or deactivated (switch-off delay). The relay switches when the time delay expires. Two push buttons adjust the sensitivity of the sensor. 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 45 here.](#)**

## Variants



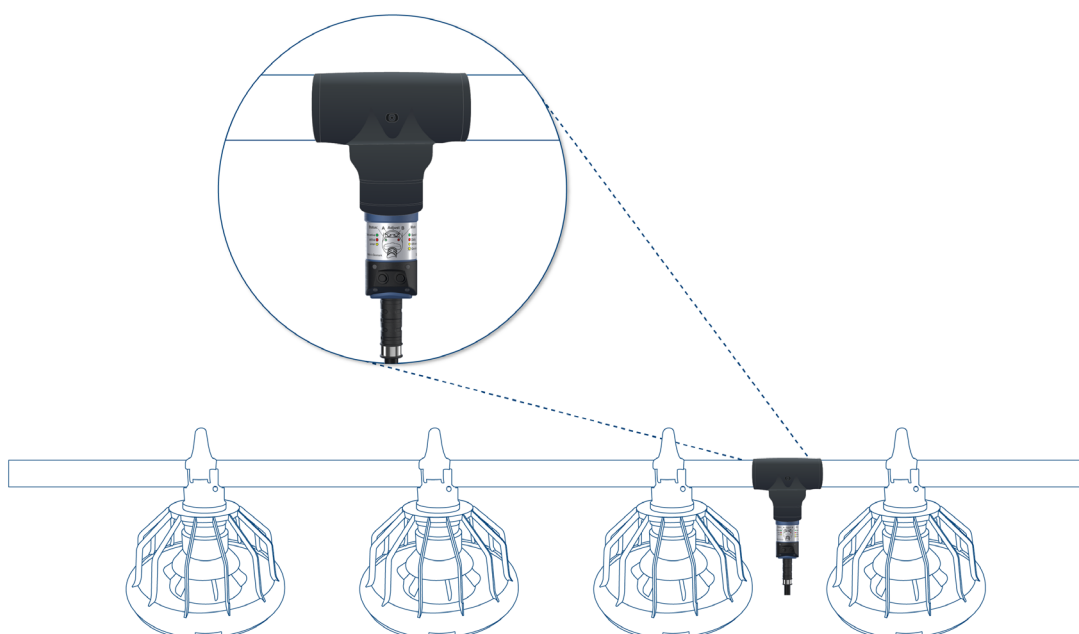
DOL 45 Threaded



DOL 45 Smooth



DOL 45 Smooth with  
T-piece



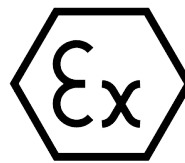
Example of DOL 45 mounted with the T-piece on a 40-60mm tube with conveying system

## 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 here.](#)





# Max Run Timer

Prevent costly feed spills and auger wear with our built-in Max Run Timer feature.

If a feeding line or a drop tube is broken, a hopper is overturned or any other damage happens to the fill system you can expect costly feed spills and auger wear. Our sensors' Max Run Timer helps prevent feed spills by regulating the maximum operating time of feed and fill system motors.

## No Need for Extra Equipment

All dol-sensors' capacitive sensors with NFC (iDOL sensors) have a built-in option for applying Max Run Timer. Normal sensors on the market do not have integrated Max Run Timer which means that you will need a separate timer device for this.

## Setting up the Max Run Timer

With the SmartAdjust App on your smartphone you can set your iDOL sensors to both on-delay, off-delay, and Max Run Timer at the same time. The Max Run Timer can be set to maximum run times of anything between 0-7200 seconds.

Sensors with Max Run Timer are placed as the sensor that calls for feed (or other materials, e.g. pellets). For examples as the last sensor in the feeding line or the top sensor in the hopper.

When the Max Run Timer has been activated you can reset it by unplugging the sensor.

## Runs with Most Feeding Systems

dol-sensors have more than 50 years of experience with designing and producing sensors for the agricultural business. Thus, our capacitive sensors with NFC runs with most feeding systems.



Watch the video on our YouTube channel

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