

# DOL 20 Capacitive Sensor

For detecting loose and solid materials in agricultural and industrial sectors.

## Robust Sensor Designed for Agricultural and Industrial Industries

The DOL 20 capacitive sensor can be used to measure the level in hoppers, feed pans, silos, bins, or for control of poultry feed lines.

The capacitive/proximity sensor is extremely sturdy to error situations such as short circuits and overload and has a long lifetime even in harsh environments.

DOL 20 is suitable together with contactors, relays, and similar within the agricultural and industrial sectors.

The mechanical design makes DOL 20 ideal for integration into applications with limited space.

## Smart Features

The sensor has an LED indicator for communicating the sensor status such as OFF or ON, and whether the sensor is programmed or using the factory settings.

The sensitivity of the DOL 20 sensor can be fixed or adjustable using trimmers to match various types of feed.

It can be mounted on the outside of plastic hoppers, as it can detect the level through this material. A DOL 20 sensor has potential-free relay contacts with a switch function and is supplied with mounting clips as standard.

## Adjusted via the SmartAdjust App

The DOL 20 capacitive sensor is also available as an iDOL 20 sensor with NFC.

The sensitivity of the iDOL 20 sensor can be adjusted using the SmartAdjust App to suit different types of feed.

## Benefits

- Accurate detection of loose and solid materials
- Avoid drilling since the sensor can be mounted on the outside of plastic hoppers

## Advantages

- LED indicator for communicating the sensor status
- IP 67 protection



# DOL 20R capacitive sensor



DOL 20R is a capacitive sensor for detection of loose and solid materials.

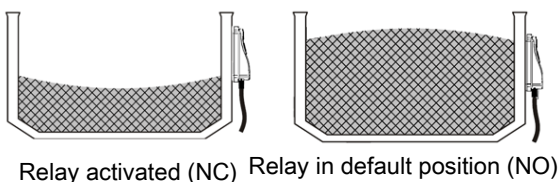
The sensor has a 5-way connection, power supply and a potential-free relay with NC and NO outputs.

The product is intended for contactor operation, but will be well suited for a number of other agricultural and industrial applications.

### Functional description

When there is material in front of the sensor, the output is in the reference position NO. When the material disappears, the timer, starts, and the output will change to NC after the set delay. The status of the sensor is indicated with a yellow LED.

The sensor sensitivity and delayed disconnection can be adjusted on two trimmers.



### Delayed disconnection:

fixed delay or delay can be adjusted on the trimmer.

### Delayed connection:

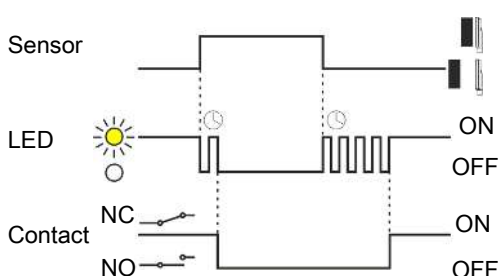
fixed delay or delay can be adjusted on the trimmer.

### Sensitivity:

fixed distance or Distance can be adjusted on the trimmer.

### MaxRun-timer:

DOL 20R Settings on the trimmer: Off, Period 1, Period 2



LED indication	Sensor status
LED OFF	Relay in default position (NO) - output ON
LED flashing	Relay in default position and delay running

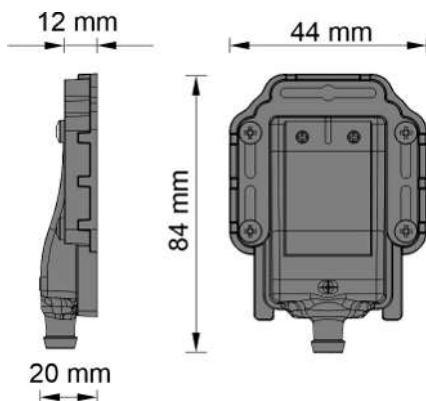
LED indication	Sensor status
LED ON	Relay activated (NC) – output OFF

## Technical data

<b>Electrical</b>		
Rated voltage (Ue)	V AC	90-250
Frequency	Hz	50-60
Consumption (max.)	W, 230 V AC	0.9
Rated relay current at 250 V AC	A RMS A RMS	0.5, Inductive 1, Resistive
Time delay, start-up	ms	< 300
Time delay OFF	s	0-600*
Time delay ON	s	1*
Indication for output ON (if installed)		Yellow LED
Operating distance (Sn) Adjustable	mm in	0-12* 0-0.47*
Hysteresis (H)	%	8-10
<b>Mechanical</b>		
Cable length	m (ft.)	2 (6.5)
Cable dimensions	mm <sup>2</sup> (AWG)	5x0.5 (5x20)
Frame for mounting sensor		Included
<b>Environment</b>		
Temperature, operation	°C (°F)	-20 - +70 (-4 – 158)
Temperature, storage	°C (°F)	-30 - +80 (-22 – 176)
Protection class	IP (NEMA)	67 (4)
Approvals		CE, C-UL

\*Can be modified according to customer needs.

## Dimensions



# DOL 20SCR (2-wire capacitive sensor)



DOL 20SCR is a capacitive sensor for detection of loose and solid materials.

The sensor has a 2-wire connection (ON or OFF), which is protected against higher current (Ie) than specified, incl. connection / short-circuit directly to supply voltage.

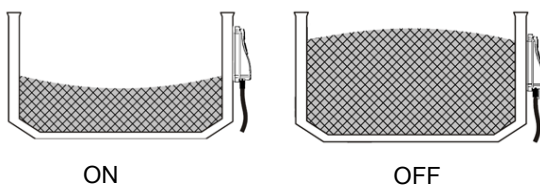
The product is suitable together with contactors, relays and similar within the agricultural and industrial sectors. The mechanical design makes DOL 20SCR ideal for integration into applications with limited space.

### Functional description

When there is material in front of the sensor, the output is in the reference position OFF. When the material disappears, the timer, starts, and the output will change to ON after the set delay.

The status of the sensor is indicated with a yellow LED.

The sensor sensitivity and delayed disconnection can be adjusted on two trimmers.



### Delayed disconnection:

fixed delay or delay can be adjusted on the trimmer.

### Delayed connection:

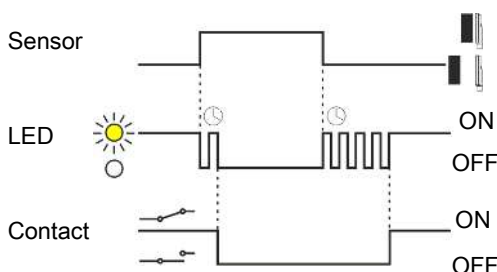
fixed delay or delay can be adjusted on the trimmer.

### Sensitivity:

fixed distance or Distance can be adjusted on the trimmer.

### MaxRun-timer:

DOL 20SCR Settings on the trimmer: Off, Period 1, Period 2



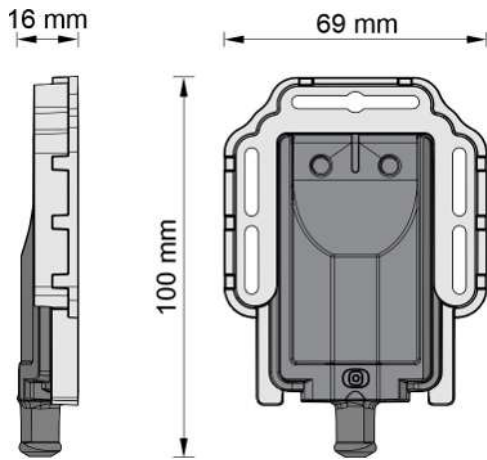
LED indication	Sensor status
LED OFF	Sensor is OFF
LED flashing	Sensor is OFF and ON delay is active
LED ON	Sensor is ON

## Technical data

<b>Electrical</b>		
Rated voltage (Ue)	V AC V DC	20 - 280 20 - 280
Frequency	Hz	47 - 63
Max. current (Ie)	mA	500
Direct connection to Ue (current >> 500 mA) without damage to the sensor	Times	> 10
Min. ON current (Im)	mA RMS/DC	< 10 (Ue = 20 - 90)
	mA RMS/DC	< 6 (Ue = 90 - 280)
OFF current (Ir)	mA RMS/DC	< 3 (Ue = 20 - 90)
	mA RMS/DC	< 1 (Ue = 90 - 280)
Voltage drop (Out) (current > 20 mA)	mA RMS/V DC	< 6
Time delay, start-up	ms	< 150
Time delay, ON*	ms	< 200
Time delay, OFF* (adjustable)	s	0.1 - 600
Operating distance (Sn)*	mm	0 - 12
	in	0 - 0.47
Safe activation distance (Sa)	mm	4 - 10
	in	0.16 - 0.39
Repeatability (R)	%	5
Hysteresis (H)	%	4 - 10
MaxRunTimer* (3 settings)	s	OFF / Period 1 / Period 2
LED indicator for sensor ON		Yellow LED
<b>Mechanical</b>		
Cable length	m (ft.)	1.5 (4.9)
Cable dimensions	mm <sup>2</sup> (AWG)	2x0.5 (2x20)
Frame for mounting sensor		Included
<b>Environment</b>		
Temperature, operation	°C (°F)	-20 - +70 (-4 - 158)
Temperature, operation, US and Canada, Ie < 300 mA	°C (°F)	-20 - +70 (-4 - 158)
Temperature, storage	°C (°F)	-40 - +80 (-40 - 176)
Protection class	IP (NEMA)	69k (1, 3, 4, 6, 12, 13)
Approvals		CE, C-UL, UL

\*Option – can be changed / introduced upon request. See the current functions on the product label.

## Dimensions



# iDOL 20SCR (2-wire capacitive sensor)



iDOL 20SCR is a capacitive sensor for detection of loose and solid materials.

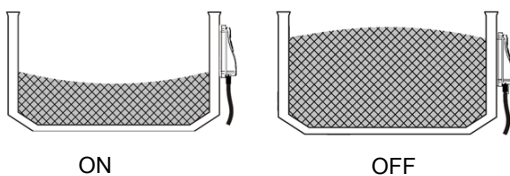
The sensor has a 2-wire connection (ON or OFF), which is protected against higher current (Ie) than specified, incl. connection / short-circuit directly to supply voltage.

The product is suitable together with contactors, relays and similar within the agricultural and industrial sectors. The mechanical design makes iDOL 20SCR ideal for integration into applications with limited space.

### Functional description

When there is material in front of the sensor, the output is in the reference position (OFF). When the material disappears, the timer, starts, and the output will change to on after the set delay. The status of the sensor is indicated with a red LED.

The sensor sensitivity and delayed disconnection can be adjusted via the SmartAdjust app.



### Delayed disconnection:

fixed delay *or* delay can be adjusted via the SmartAdjust app.

### Delayed connection:

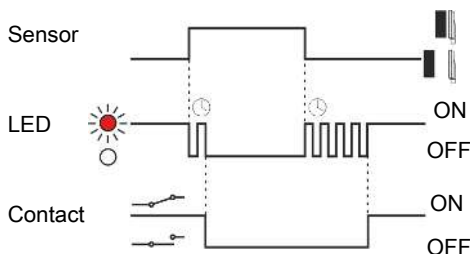
fixed delay *or* delay can be adjusted via the SmartAdjust app.

### Sensitivity:

fixed distance *or* distance can be adjusted via the SmartAdjust app.

### MaxRun-timer:




iDOL 20 SCR adjustable 1-7200s via SmartAdjust app



LED indication	Sensor status
LED OFF	Sensor is OFF
LED is flashing fast	ON or OFF delay is active
LED is flashing slowly	The sensor is not program-med, factory settings are used
LED ON	Sensor is ON



## Technical data

Electrical		
Rated voltage (Ue)	V AC V DC	20 - 280 20 - 280
Frequency	Hz	47 - 63
Max. current (Ie)	mA	500
Direct connection to Ue (current >> 500 mA) without damage to the sensor	Times	> 10
Min. ON current (Im)	mA RMS/DC	< 10 (Ue = 20 - 90)
	mA RMS/DC	< 4 (Ue = 90 - 280)
OFF current (Ir)	mA RMS/DC	< 3 (Ue = 20 - 90)
	mA RMS/DC	< 1 (Ue = 90 - 280)
Voltage drop (Out) (current > 20 mA)	mA RMS/V DC	< 6
Time delay, start-up	ms	< 150
Time delay, ON (adjustable)	s	0 - 3600
Time delay, OFF (adjustable)	s	0 - 3600
Operating distance (Sn) (adjustable)	mm	0 - 12
	in	0 - 0.47
Safe activation distance (Sa)	mm	4 - 10
	in	0.16 - 0.39
Repeatability (R)	%	5
Hysteresis (H)	%	4 - 10
MaxRunTimer* (adjustable)	s	0 - 7200
LED indicator for sensor ON		Red LED
Mechanical		
Cable length*	m (ft.)	1.5 (4.9)
Cable dimensions	mm <sup>2</sup> (AWG)	2x0.5 (2x20)
Frame for mounting sensor		Included
Environment		
Temperature, operation	°C (°F)	-20 - +70 (-4 - 158)
Temperature, operation, US and Canada, Ie < 300 mA	°C (°F)	-20 - +70 (-4 - 158)
Temperature, storage	°C (°F)	-40 - +80 (-40 - 176)
Protection class	IP (NEMA)	69k (1, 3, 4, 6, 12, 13)
Approvals		CE, C-UL, UL
SmartAdjust	  	
	Activated NFC required	

\*Option – can be changed upon request. See the current functions on the product label.

## Dimensions

