dol
SENSORS
MAKING SENSE IN YOUR PRODUCTION

DOL 25 PNP/NPN/SCR

EN

TECHNICAL USER'S GUIDE

PRODUCT DESCRIPTION

DOL 25 is a small capacitive proximity sensor with adjustable sensitivity for detection of grain and solids. The sensor can have adjustable OFF time delay.

DOL 25-PNP/NPN

The sensor is DC supplied and has two NPN or PNP outputs (NO and NC).

DOL 25-SCR

The sensor is AC supplied and has a two-wired connection (NC or NO).

MOUNTING GUIDE

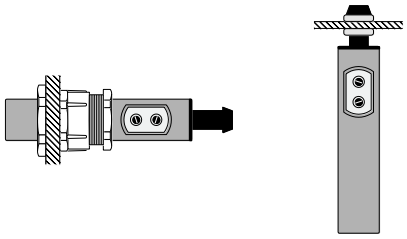


Figure 1

Fields of application:

- Control of emptying or filling various containers

Mounting methods, Figure 1:

- The sensor mounted in a PG21 gland
- The sensor mounted hanging in a bush

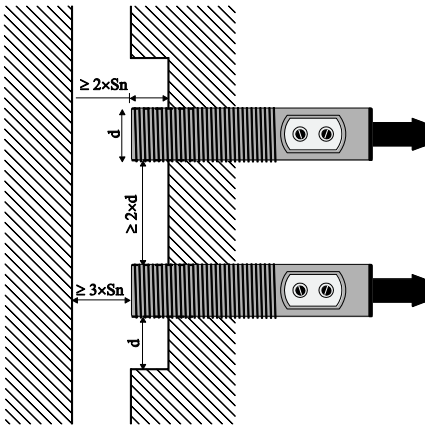


Figure 2

Mounting of the non-flushed version:

The sensor can be supplied in either a flushed or a non-flushed version. The non-flushed sensor is sensitive on the side, and therefore it is not to be placed closer to another item than shown in Figure 2. If these measurements are not observed, the sensor will have a different sensitivity than the one given.

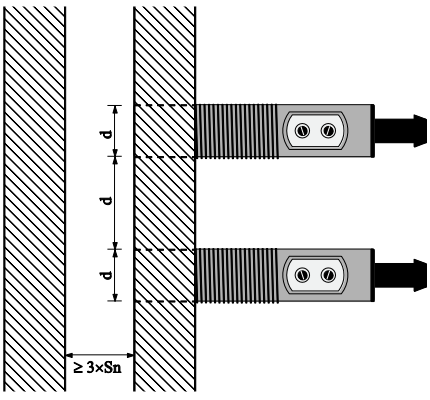


Figure 3

Mounting of the flushed version:

The flushed sensor is not sensitive on the side, and therefore it can be placed flush with the mounting surface.

INSTALLATION GUIDE

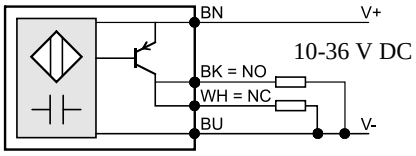


Figure 4

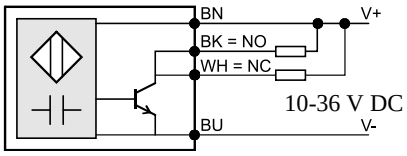


Figure 5

PNP (Figure 4)/NPN (Figure 5) electric installation:

Connect the sensor to a DC supply and connect the loads between the outputs and V- for the PNP version and V+ for the NPN version. The sensor is protected against polarity errors, and the outputs are protected against overload and short circuit. If the output current exceeds the nominal output current, the output function is switched off. Eliminate the short circuit or choose a smaller load to eliminate the error. The current limitation error is indicated on the sensor by two quick flashes followed by a pause.

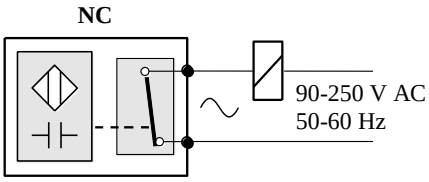


Figure 6

SCR (Figure 6) electric installation:

The sensor is connected in series with the load. The polarity is unimportant.

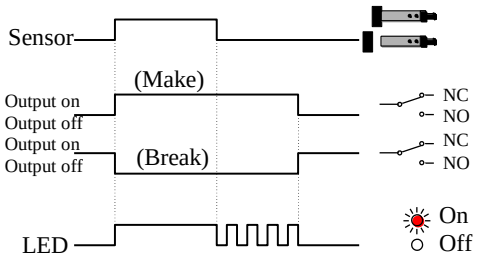


Figure 7

Functional description, Figure 7:

When material is in front of the sensor, the NO output is ON and the NC output is OFF. When the material disappears the timer will start, and after OFF time delay the outputs will change condition.

Status on the sensor is indicated by an orange LED.

Sensor	NO-contact	NC-contact	LED
	OFF	ON	OFF
	ON	OFF	ON
	ON	OFF	Flashing

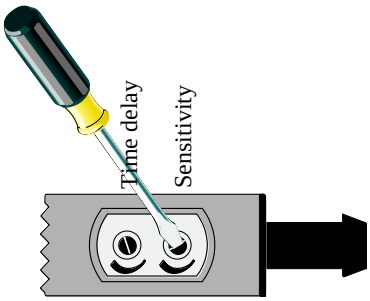


Figure 8

The sensor can be supplied with either

- no setting
- one setting
- two settings

Setting of sensivitity, Figure 8:

The sensitivity is reduced by turning the potentiometer counter-clockwise and increased by turning the potentiometer clockwise.

Setting of time delay, Figure 8:

The time delay is reduced by turning the potentiometer counter-clockwise and increased by turning the potentiometer clockwise.

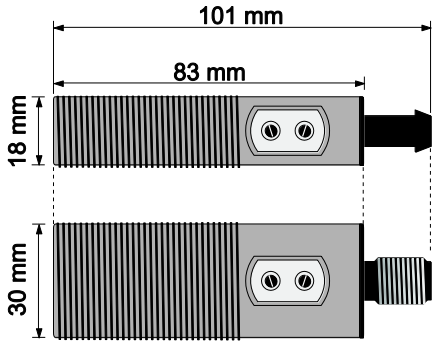


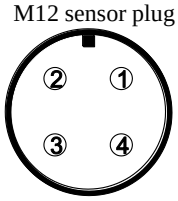
Figure 9

Sensor dimensions, Figure 9:

Cable length	2 m
Conductor dimensions	4 x 0.26 mm^2 (AWG22)

Conductor colours	
Brown	V+
Black	NO output
White	NC output
Blue	V-

M12 sensor plug



1. V+
2. NC output
3. V-
4. NO output

Conductor colours and pin numbers are according to IEC60947-5-2.

TECHNICAL DATA

	DOL 25 PNP/NPN	DOL 25 SCR
Supply voltage (Ue)	10 – 36 V DC	
Supply voltage (Ub)		90-250 V AC
Max. ripple	10 %	
Rated current (Ie)	500 mA	300 mA
Voltage drop, output ON	< 2.5 V	< 10 V AC RMS
Output function	NC and NO	NC or NO
No-load supply current	< 6 mA	
Time delay at start-up	< 100 mS	< 100 mS
Time delay ON	< 100 mS	< 100 mS
Time delay OFF	0-600 sec.	0-600 sec.
Temperature, operation	-20 - +70 ºC	-20 - +70 ºC
Temperature, storage	-30 - +80 ºC	-30 - +80 ºC
Protection class	IP67	IP67
Approvals	CE and C-UL	CE and C-UL

	Ø18 mm		Ø30 mm	
	Non-flushed	Flushed	Non-flushed	Flushed
Operating distance (**Sn**) adjustable	0-10 mm	0-5 mm	0-20 mm	0-10 mm
Effective operating distance (Sa)	0 ≤ Sa ≤ 0.8* Sn mm			
Repetition accuracy (R)	5 %			
Hysteresis (H)	< 0.15* Sn mm			

MAINTENANCE INSTRUCTIONS

No maintenance is required. However, it may be necessary to clean around the sensor, if it is placed in a dirty environment