

Proximity Sensors Capacitive Flat Pack Polycarbonate Housing Type EC 5525, DC

TRIPLESIELD™

CARLO GAVAZZI



- Featuring **TRIPLESIELD™** sensor protection
- Adjustable sensing distance 4-25 mm
- Rated operational voltage: 10-40 VDC
- Output: DC 200 mA, NPN or PNP
- Make and break switching function, LED indication
- Capacitive, Inductive and Photoelectric flat pack series in PC housing, IP 67
- High noise immunity
- Universal flush and non-flush mountable
- Plug and cable versions

Product Description

Capacitive proximity switches with sensing distance 16 mm flush mounted and sensing distance 25 mm non-flush mounted by adjustment. 4-wire DC output with both make (NO) and break (NC)

switching. Flat pack housing, size (WxHxD) 35 x 55 x 15 mm made in polycarbonate. Easy mounting with only two M4 screws. Ideal for use in material handling and plastic machinery applications.

Ordering Key

EC 55 25 NPA P-1

Capacitive proximity switch
Housing
Rated operational distance
Output type
Housing material
Connection type

Type Selection

Housing dimensions W x H x D	Rated operating dist. (S _n) ¹⁾ Flush/non-flush	Ordering no. NPN/cable Make & break swit.	Ordering no. NPN/plug Make & break swit.	Ordering no. PNP/cable Make & break swit.	Ordering no. PNP/plug Make & break swit.
35 x 55 x 15	16/25 mm	EC 5525 NPAP	EC 5525 NPAP-1	EC 5525 PPAP	EC 5525 PPAP-1

¹⁾ Object: Grounded steel plate

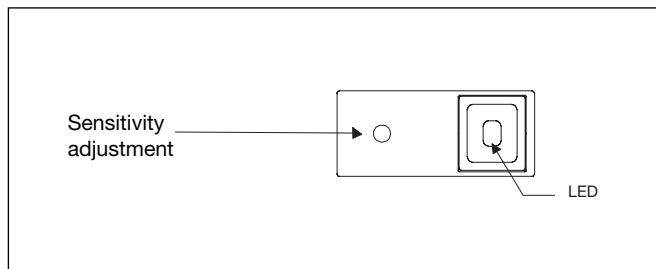
Specifications

Rated operating dist. (S_n)	4 to 25 mm factory set at 25 mm	Frequency of operating cycles (f)	50 Hz
Sensitivity	Adj. 270° single turn pot.meter	Indication for output ON	LED, yellow
Effective operating dist. (S_r)	$0.9 \times S_n \leq S_r \leq 1.1 \times S_n$	Environment	
Usable operating dist. (S_u)	$0.8 \times S_r \leq S_u < 1.2 \times S_r$	Degree of protection	IP 67 (Nema 1, 3, 4, 6, 13)
Repeat accuracy (R)	≤ 5%	Temperature	
Hysteresis (H)	3 to 20% of sensing distance	Operating temperature	-25 to +80°C (-13 to +176°F)
Rated operational volt. (U_B)	10 to 40 VDC (ripple incl.)	Storage temperature	-40 to +85°C (-40 to +185°F)
Ripple	≤ 10%	Housing material	Polycarbonate (PC), grey
Rated operational current (I_o)		Connection	
Continuous	≤ 200 mA	Cable	Grey, 2 m, 4 x 0.34 mm ² Oil proof, PVC
No-load supply current (I_o)	≤ 10 mA (no load)	Plug (-1)	M12 x 1
Voltage drop (U_d)	≤ 2.5 VDC at max. load	Cable for plug (-1)	CON.1A-series
Protection	Reverse polarity, short-circuit, transients	Weight (incl. nuts)	125 g (cable version) 40 g (plug version)
		Approvals	UL, CSA
		CE-marking	Yes

The diagram shows two transistor circuit configurations. The left configuration is for an NPN transistor, with the emitter connected to the negative supply (-) and the base connected to the positive supply (+) through a base resistor (BN). The collector is connected to the positive supply (+) through a collector resistor (BK). The load resistor (WH) is connected between the collector and the positive supply (+). The output is taken from the collector. The right configuration is for a PNP transistor, with the emitter connected to the positive supply (+) and the base connected to the negative supply (-) through a base resistor (BN). The collector is connected to the negative supply (-) through a collector resistor (BK). The load resistor (WH) is connected between the collector and the negative supply (-). The output is taken from the collector.

The environments in which capacitive sensors are installed can often be unstable regarding temperature, humidity, object distance and industrial (noise) interference. Because of this, Carlo Gavazzi offers as standard features in all **TRIPLESIELD™** capacitive sensors a user-friendly sensitivity adjustment instead of having a fixed sensing range, extended

Note:
Sensors are factory set (default)
to maximum rated sensing range.



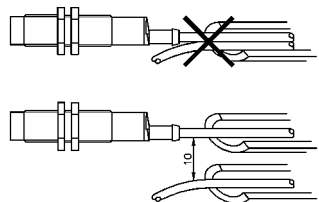
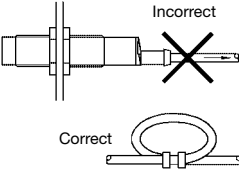
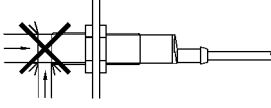
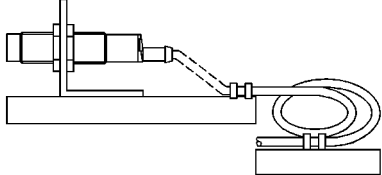
Capacitive sensors have the unique ability to detect almost all materials, either in liquid or solid form. Capacitive sensors can detect metallic as well as non-metallic objects, however, their traditional use is for non-metallic materials such as:

- **Chemical Industry**
Cleansers, fertilisers, liquid soaps, corrosives and petrochemicals.
- **Wood Industry**
Saw dust, paper products, door and window frames.
- **Ceramic & Glass Industry**
Raw material, clay or finished products, bottles.

- **Packaging Industry** Package inspection for level or contents, dry goods, fruits and vegetables, dairy products.
- Materials are detected due to their dielectric constant. The bigger the size of an object, the higher the density of material, the better or easier it is to detect the object. Nominal sensing distance

for a capacitive sensor is referenced to a grounded metal plate (ST37). For additional information regarding dielectric ratings of materials please refer to Technical Information.

Installation Hints (cont.)

To avoid interference from inductive voltage/current peaks, separate the prox. switch power cables from any other power cables, e.g. motor, contactor or solenoid cables 	Relief of cable strain  The cable should not be pulled	Protection of the sensing face  A proximity switch should not serve as mechanical stop	Switch mounted on mobile carrier  Any repetitive flexing of the cable should be avoided
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Delivery Contents

- Capacitive switch: EC55.. PAP(-1)
- Screw driver
- **Packaging:** Cardboard box
- Installation & Adjustment Guide

Accessories

- Plugs CON.1A.. serie

For further information refer to "Accessories".