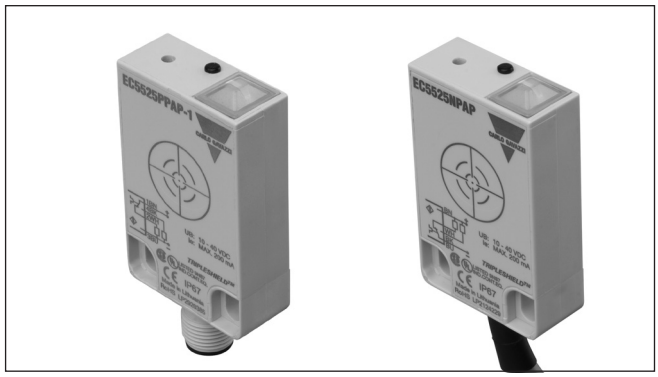
# Proximity Sensors Capacitive Flat Pack Polycarbonate Housing Type EC 5525, DC

TRIPLESHIELD™

CARLO GAVAZZI




- Featuring ***TRIPLESHIELD***™ 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<br>factory set at 25 mm |
| **Sensitivity** | Adj. 270° single turn pot.meter |
| **Effective operating dist.** ($S_r$) | $0.9 \times S_n \le S_r \le 1.1 \times S$ |
| **Usable operating dist.** ($S_u$) | $0.8 \times S_r \le S_n > 1.2 \times S_r$ |
| **Repeat accuracy** (R) | ≤ 5% |
| **Hysteresis** (H) | 3 to 20% of sensing distance |
| **Rated operational volt.** ($U_B$) | 10 to 40 VDC (ripple incl.) |
| **Ripple** | ≤ 10% |
| **Rated operational current** ($I_e$)<br>Continuous | <br>≤ 200 mA |
| **No-load supply current** ($I_o$) | ≤ 10 mA (no load) |
| **Voltage drop** ($U_d$) | ≤ 2.5 VDC at max. load |
| **Protection** | Reverse polarity,<br>short-circuit, transients |

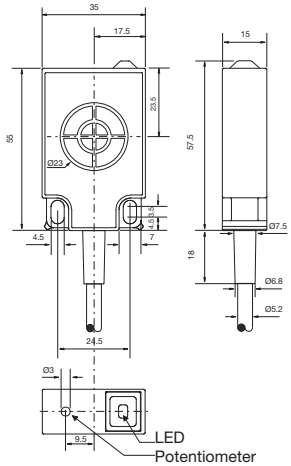
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|---|---|
| **Frequency of operating cycles** (f) | 50 Hz |
| **Indication for output ON** | LED, yellow |
| **Environment**<br>Degree of protection | <br>IP 67 (Nema 1, 3, 4, 6, 13) |
| **Temperature**<br>Operating temperature<br>Storage temperature | <br>-25 to +80°C ( -13 to +176°F)<br>-40 to +85°C (-40 to +185°F) |
| **Housing material** | Polycarbonate (PC), grey |
| **Connection**<br>Cable<br><br>Plug (-1)<br>Cable for plug (-1) | <br>Grey, 2 m, 4 x 0.34 $mm^2$<br>Oil proof, PVC<br>M12 x 1<br>CON.14NF.. series |
| **Weight** (incl. nuts) | 125 g (cable version)<br>40 g (plug version) |
| **Approvals** | UL, CSA |
| **CE-marking** | Yes |



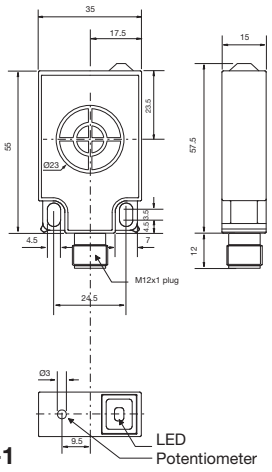
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## Dimensions

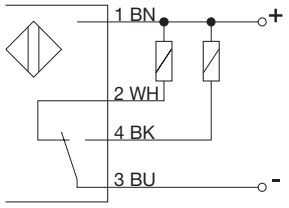



EC 5525 .PAP

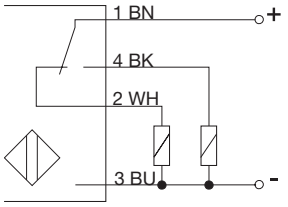



EC 5525 .PAP-1

## Wiring Diagrams




NPN

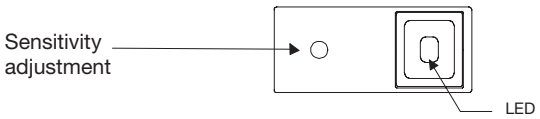



PNP

## Adjustment Guide

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 *TRIPLESHIELD*™ capacitive sensors a user-friendly sensitivity adjustment instead of having a fixed sensing range, extended sensing range to accommodate mechanically demanding areas, temperature stability to ensure minimum need for adjusting sensitivity if temperature varies and high immunity to electromagnetic interference (EMI).

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




## Installation Hints

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:

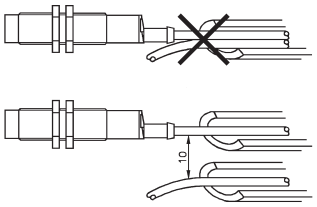
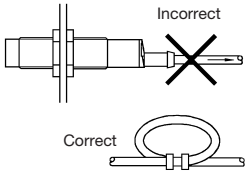
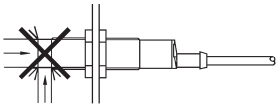
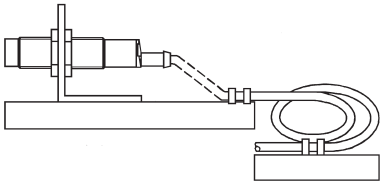
- **Plastic Industry**
  Resins, regrinds or moulded products.
- **Chemical Industry**
  Cleansers, fertilisers, liquid soaps, corrosives and petrochemicals.
- **Wood Industry**
  Saw dust, paper products, door and window frames.
- **Ceramic & Glass Industry**
  Raw material, clay or finished products,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



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## 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* | *Protection of the sensing face* | *Switch mounted on mobile carrier* |
|---|---|---|---|
|   |   The cable should not be pulled |  A proximity switch should not serve as mechanical stop |  Any repetitive flexing of the cable should be avoided |

## Delivery Contents

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

## Accessories

- Plugs CON.14NF.. series



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