Proximity Sensors Capacitive Thermoplastic Polyester Housing Type EC, M 30, AC

Product Description
Capacitive proximity switches with either sensing distance 16 mm flush mounted in metal or 25 mm sensing distance non-flush mounted. 2-wire AC output with a switch for choosing NO and NC switching. Grey M 30 polyester housing with 2 m PUR cable or plug. Ideal for use in level and plastic machinery applications.

Ordering Key
EC 3025 TBA P L-6
Type: Capacitive proximity switch
Housing diameter (mm) 
Rated operating dist. (mm) 
Output type 
Housing material 
Housing type 
Connection type 

Specifications
Rated operational volt. \((U_0)\) 20 to 265 VAC (ripple included)
Ripple \(\leq 10\%\)
Rated operational current \((I_o)\)
Continuous \(\leq 500\ mA\)
Short-time \(\leq 2.5\ A\) (max. 20 ms)
Min. load current \(\leq 10\ mA\)
OFF-state current \((I_i)\) \(\leq 2.5\ mA\) (@ 240 VAC)
1.7 mA (@ 120 VAC)
Voltage drop \((U_d)\) \(\leq 10\ VAC\) (at loads \(\geq 20\ mA\))
Power ON delay \(\leq 100\ ms\)
Frequency of operating cycles \((f)\) 25 Hz
Indication for output ON LED, yellow
Rated operating dist. \((S_n)\)
(adjutable) 3016: 2 to 16 mm factory set at 16 mm
3025: 4 to 25 mm factory set at 25 mm
Effective operating dist. \((S_r)\) \(0.9 \times S_n \leq S_r \leq 1.1 \times S_n\)
Usable operating dist. \((S_u)\) \(0.8 \times S_r \leq S_u > 1.2 \times S_r\)
Repeat accuracy \((R)\) \(\leq 5\%\)
Hysteresis \((H)\) 4 to 20% of sensing distance

EMC ratings
- ENV 50 140 RF Electromagnetic field AM, 80-1000 MHz, Level 3 10 V/m
- ENV 50 204 RF Electromagnetic field PM, 80-900 MHz, Level 3 10 V/m
- EN 61000-4-2 ESD Contact discharge, Level 4 8 kV
Air discharge, Level 4 17 kV
- ENV 50 141 RF Common mode EN 61000-4-4 Fast transient Rep. freq. 5 kHz, Level 3 2 kV
- IEC 60947-5-2 Surges common mode, Gen. Imp. 500E, Level 3 2.5 kV

Environment
Degree of protection IP 67 (Nema 1, 3, 4, 6, 13)
Operating temperature -25° to +80°C (-13° to +176°F)
Storage temperature -40° to +85°C (-40° to +185°F)

Housing material Grey thermoplastic polyester

Cable 2 m, 2 x 0.5 mm² grey PUR, oil proof

Plug (-6) M12 x 1 double keyed CONH-1A-series

Weight (incl. nuts) 3016: 140 g
3025: 150 g

Specifications are subject to change without notice
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**Wiring Diagrams**

![Wiring Diagrams](image)

**Dimensions**

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>Ø mm</th>
<th>C mm</th>
<th>D mm</th>
<th>E mm</th>
<th>F mm</th>
<th>SW mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>EC 3016TBAPL(-6)</td>
<td>M 30 x 1.5 x 50</td>
<td>28</td>
<td>50</td>
<td>13.6</td>
<td>15.4</td>
<td>5</td>
<td>36</td>
</tr>
<tr>
<td>EC 3025TBAPL(-6)</td>
<td>M 30 x 1.5 x 50</td>
<td>28</td>
<td>62</td>
<td>13.6</td>
<td>15.4</td>
<td>5</td>
<td>36</td>
</tr>
</tbody>
</table>

**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.

**Delivery Contents**

- Capacitive switch: EC 30.. TBAPL(-6)
- Screw driver
- Packaging: Cardboard box
- Installation & Adjustment Guide (MAN CAP ENG/GER)

**Accessories**

- Plugs CONH6A.. serie, please refer to “Accessories.”

**Cable**

![Cable](image)

**Plug**

![Plug](image)