Proximity Sensors Capacitive Thermoplastic Polyester Housing Type CA, M18, DC

Product Description
Capacitive proximity switches with either sensing distance 8 mm flush mounted in metal or sensing distance 12 mm non-flush mounted. 4-wire DC output with both make (NO) and break (NC) switching. Grey M18 polyester housing with 2 m PVC cable or M12 plug. Ideal for use in level and plastic machinery applications.

Ordering Key

<table>
<thead>
<tr>
<th>Housing diameter</th>
<th>Rated operating dist. (Sn)</th>
<th>Mounting</th>
<th>Ordering no. Transistor NPN/cable</th>
<th>Ordering no. Transistor NPN/plug</th>
<th>Ordering no. Transistor PNP/cable</th>
<th>Ordering no. Transistor PNP/plug</th>
</tr>
</thead>
<tbody>
<tr>
<td>M18</td>
<td>8 mm</td>
<td>Flush (built-in)</td>
<td>CA18CLF08NA</td>
<td>CA18CLN12NA</td>
<td>CA18CLN12PA</td>
<td>CA18CLN12PAM1</td>
</tr>
<tr>
<td>M18</td>
<td>12 mm</td>
<td>Non-flush</td>
<td>CA18CLN12NA</td>
<td>CA18CLN12NAM1</td>
<td>CA18CLN12PAM1</td>
<td>CA18CLN12PAM1</td>
</tr>
</tbody>
</table>

1) Object: Grounded steel plate

Specifications

<table>
<thead>
<tr>
<th>Rated operating dist. (Sn)</th>
<th>Sensitivity</th>
<th>Effective operation dist. (Sr)</th>
<th>Usable operation dist. (Su)</th>
<th>Repeat accuracy (R)</th>
<th>Hysteresis (H)</th>
<th>Rated operational voltage (U0)</th>
<th>Ripple</th>
<th>Rated operational current (I0)</th>
<th>No-load supply current (Io)</th>
<th>Voltage drop (U0)</th>
<th>Protection</th>
<th>Frequency of operating cycles (f)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CA18CLF08</td>
<td>Adj. 270° turn pot. meter</td>
<td>0.9 x S0 ≤ Sr ≤ 1.1 x S0</td>
<td>0.8 x S0 ≤ Su ≤ 1.2 x S0</td>
<td>≤ 5%</td>
<td>4 to 20% of sensing distance</td>
<td>10 to 40 VDC (ripple included)</td>
<td>≤ 10%</td>
<td>≤ 200 mA</td>
<td>≤ 10 mA</td>
<td>≤ 2.5 VDC at max. load</td>
<td>Reverse polarity, short-circuit, transients</td>
<td>30 Hz</td>
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<tr>
<td>CA18CLN12</td>
<td></td>
<td></td>
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</tbody>
</table>

Indication for output ON: LED, yellow

Environment
Degree of protection: IP 67 (Nema 1, 3, 4, 6, 13)

Temperature
Operating temperature: -25° to +80°C (-13° to +176°F)
Storage temperature: -40° to +85°C (-40° to +185°F)

Housing material
Body: Grey, thermoplastic polyester
Front: Grey, polyester
Cable end: Black, reinforced nylon
Nuts: Grey, M12 x 1

Connection
Cable: Grey, 2 m, 4 x 0.34 mm²
Plug (M1): Oil proof PVC
Cable for plug (M1): CON.1A-series

Weight
Cable version: 110 g
Plug version: 30 g

Approvals
UL, CSA

CE-marking
Yes

Specifications are subject to change without notice (20.08.01)
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.

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.

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: CA18CL...
- Screw driver
- 2 nuts
- Packaging: Cardboard box
- Installation & Adjustment Guide

Accessories

- Plugs CON.1A...series.

For further information refer to “Accessories”.

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