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Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from, Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Proximity Sensors Capacitive Thermoplastic Polyester Housing Types CA, M18, M30, DC, Teach-in

• Featuring TRIPLESHIELD[™] Sensor Protection

TRIPLESHIELD™

- Sensing distance: 0.5 12 mm (M18) and 1.0 30 mm (M30)
- Teach-in of sensing distance via push-button or COM-input
- Automatic detection of NPN or PNP load
- Selectable make or break switching by means of Teach-in function
- Protection: Short-circuit, transients and reverse polarity
- Humidity compensation
- Alarm output
- 5 years of warranty

Product Description

Capacitive proximity switches with a sensing distance of either 8 mm flush mounted in metal or 12 mm nonflush mounted for the M18 version, and either 16 mm flush mounted in metal or 30 mm non-flush mounted for the M30 version. The switching points can be altered by means of the Teach-in function. 3-wire DC output with selectable make (NO) or break (NC) switching and NPN Alarm. Grey polyester housing with 2 m PVC cable or M12 plug.

Ordering Key

Capacitive proximity switch _____ Housing diameter (mm) _____ Housing material _____ Housing length _____ Detection principle _____ Rated operating dist. (mm) _____ Output type _____ Output configuration _____ Connection type _____

Type Selection

Housing diameter	Rated operating distance (S _n)	Ordering no. Cable	Ordering no. Plug
M18	12 mm	CA18CLC12BP	CA18CLC12BPM1
M 30	30 mm	CA30CLC30BP	CA30CLC30BPM1

Specifications

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Sensing range (S _d)	
CA18CLC12	0.5 - 12 mm
	factory set at 8 mm
CA30CLC30	1.0 - 30 mm
0,0002000	factory set at 15 mm
	lactory set at 15 mm
Sensitivity	Adjustable (Teach-in)
Effective operating dist. (S _r)	$0.9 \ x \ S_n \leq S_r \leq 1.1 \ x \ S_n$
Usable operating dist. (S _u)	$0.8 \ x \ S_r \leq S_u \leq 1.2 \ x \ S_r$
Repeat accuracy (R)	$\leq 5\%$
Hysteresis (H)	Depending on Teach-in
Rated operational volt. (U _B)	10 to 40 VDC (ripple incl.)
Ripple	≤ 10%
Rated operational current (I_e)	\leq 250 mA (continuous)
No-load supply current (I_o)	\leq 12 mA
Voltage drop (U _d)	\leq 2.5 VDC @ max. load
Protection	Short-circuit, reverse
	polarity, transients
TRIPLESHIELD™	
protection-EMC	
IEC 1000-4-2/EN 61000-4-2	30 kV
IEC 1000-4-3/EN 61000-4-3	> 15 V/m
IEC 1000-4-4/EN 61000-4-4	3 kV
	•
IEC 1000-4-6/EN 61000-4-6	$> 10 V_{rms}$

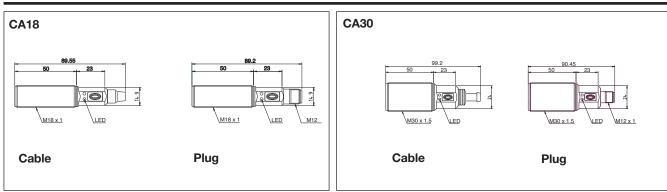
Frequency of operating cycles (f)	15 Hz
Indication For output ON	
For safe/unsafe	LED, yellow LED, green
Environment	
Degree of protection Operating temperature Storage temperature	IP 68 -20° to +85°C (-4° to +185°F) -40° to +85°C (-40° to +176°F)
Housing material	
Body Cable end	Grey, thermoplastic polyester Polyester, softened
Nuts	Black, PA12 Grilamid
Connection	
Cable	Grey, 2 m, 4 x 0.25 mm ² Oil proof, PVC
Plug (M1)	M12 x 1
Cable for plug (M1)	CON.1A-series
Weight	
Cable version - M18 / M30	110 g/160 g
Plug version - M18 / M 30	30 g/70 g
Approvals	UL, CSA
CE-marking	Yes



CA18CLC12BPM1



Dimensions



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:

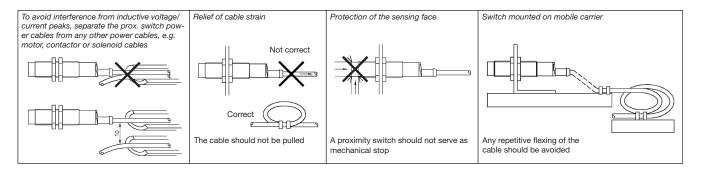
Sensors are factory set (default) to nominal sensing range S_n.

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:

- Plastics 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 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.



or

Delivery Contents

- Capacitive switch: CA..CLC..BP..
- Packaging: Cardboard box •
- Installation & Adjustment Guide (MAN CAP ENG/GER)
- Accessories
- Plugs CON.1A., series.
- For further information please refer to "Accessories.



Teach-in Guide

Adjustment - Background

No target present

 $\label{eq:press} Press \ push-button > 3 \ seconds \ until \ LED's \ are \ flashing \ one \ time \ per \ second. \ The \ background \ will \ be \ calibrated \ when \ the \ push-button \ is \ released \ during \ the \ following \ 3 \ seconds \ during \ the \ following \ 3 \ seconds \ during \ the \ following \ 4 \ seconds \ during \ background \ background \ will \ be \ calibrated \ background \ will \ be \ calibrated \ background \ will \ be \ calibrated \ when \ the \ push-button \ background \ will \ be \ calibrated \ when \ the \ background \ will \ be \ calibrated \ when \ the \ the \ background \ will \ be \ calibrated \ when \ the \ background \ when \ the \ background \ will \ be \ calibrated \ when \ the \ background \ will \ be \ calibrated \ when \ the \ background \ will \ be \ calibrated \ when \ the \ background \ will \ be \ calibrated \ when \ the \ background \ will \ be \ calibrated \ when \ the \ background \ when \ the \ background \ will \ be \ calibrated \ when \ the \ background \ when \ the \ background \ when \ the \ background \ when \ the \ the \ background \ when \ the \ background \ when \ the \ background \ when \ the \ the \ background \ the \ the \ the \ background \ when \ the \ the\$

Push-button														
LED - Green														
LED - Yellow														
Time (sec)														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13

Adjustment - Object

Target present

Press push-button >6 seconds until LED's are flashing two times per second. The object will be calibrated when the pushbutton is released during the following 3 seconds

Push-button														
LED - Green				П		П								
LED - Yellow														
Time (sec)														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13

Adjustment - NO - NC

Press push-button >9 sec. until LED's are flashing three times per second. The status of NO-NC will toggle when the pushbutton is released during the following 3 seconds

Push-button														
LED - Green														
LED - Yellow					П									
Time (sec)														
	0	1	2	3	4	5	6	7	8	9	10	11	12	13

Releasing the push-button after 12 sec. returns the sensor to factory settings.

Wiring Diagrams

