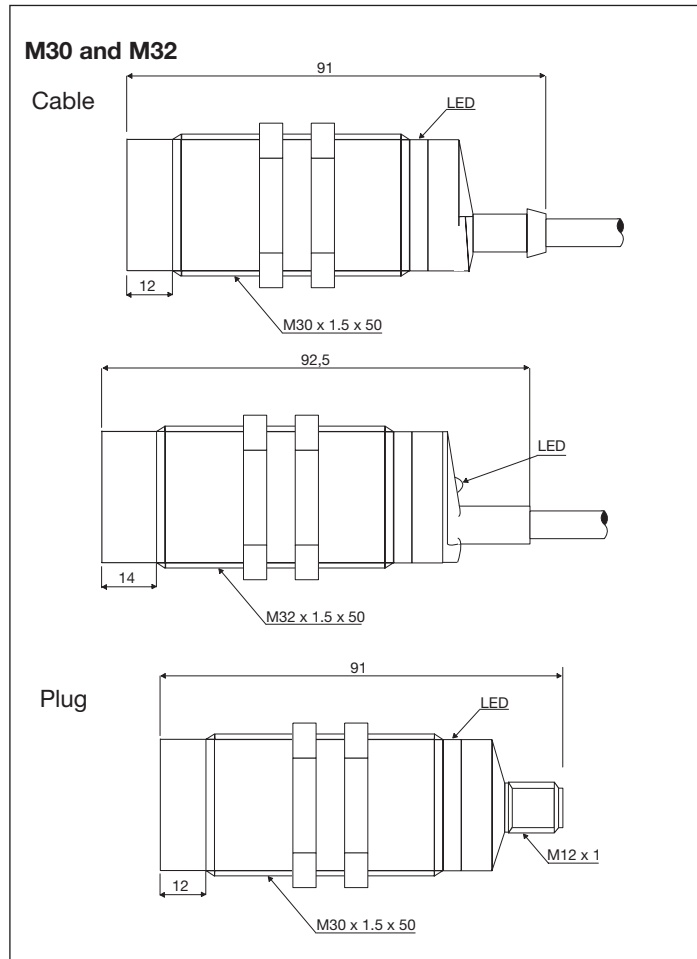


Installation Hints

<p>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</p>	<p>Relief of cable strain The cable should not be pulled</p>	<p>Protection of the sensing face A proximity switch should not serve as mechanical stop</p>	<p>Switch mounted on mobile carrier Any repetitive flexing of the cable should be avoided</p>

Dimensions



Specifications

Sensitivity	Adjustable (Self-Teach)
Repeat accuracy (R)	≤ 5%
Hysteresis (H)	5 - 10%
Rated operational volt. (U_o)	10 to 40 VDC (ripple incl.)
Ripple	≤ 10%
Rated operational current (I_o)	≤ 250 mA (continuous)
No-load supply current (I_o)	≤ 12 mA
Voltage drop (U_d)	≤ 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	4 kV
IEC 1000-4-6/EN 61000-4-6	> 10 V _{rms}
Frequency of operating cycles (f)	5 Hz
Indication	
For output ON	LED, yellow
For calibration	LED, red
Environment	
Degree of protection	IP 68
Operating temperature	-20° to +85°C (-4° to +185°F)
Max. temperature on sensing face	120°C (248°F)
Storage temperature	-40° to +85°C (-40° to +185°F)
Housing material	
Body	Grey, thermoplastic polyester
Cable end	Polyester, softened
Nuts	Black, PA12 Grilamid
Connection	
Cable	M30 Grey, 2 m, 4 x 0.34 mm ² M32 Grey, 2 m, 4 x 0.75 mm ² Oil proof, PVC M12 x 1
Plug (M1)	
Cable for plug (M1)	CON.1A-series
Weight	
Cable version - M30 / M32	150 g/230 g
Plug version - M 30 70 g	
Approvals	UL, CSA
CE-marking	yes

Capacitive Level Detector for Plastic and Rubber

Types CA, M30, M32, DC Self-Teach



User Manual

CARLO GAVAZZI INDUSTRI A/S

Over Hadstenvvej 40, DK-8370 Hadsten

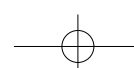
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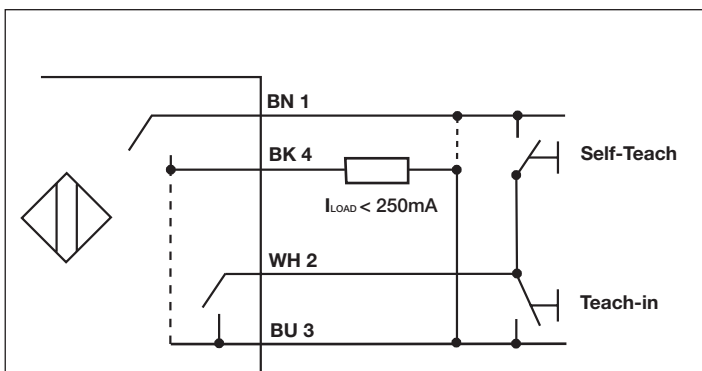
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Certified in accordance with ISO 9001



Wiring Diagram / Schaltbild / Forbindelsesdiagram



The PNP- or NPN-load will automatically be detected.

Always connect the white wire to (+) supply for running mode (Locked setup)

Installation

First time calibration

Install and wire the sensor according to the above wiring diagram. Remember to connect the white wire, the 4th wire, to (+) supply. The very first time the sensor is powered up, the sensor will automatically adapt to the surroundings and calculate an optimal sensitivity by itself – no matter what kind of plastic material to be detected. As long as the white wire is connected to (+) supply, the sensor will be locked and be in running mode.

New	Action	Description of sensor setup
First time calibration	New sensor	Factory settings
	Install the sensor in the application	-
	Connect the sensor electrical. White wire to (+) supply	-
	Power ON	Self-Teach: Red LED blinking The sensor is now in running mode

Locked sensor set-up

No other adjustment is needed. As long as the white wire is connected to (+) supply, the set-up of the sensor is locked, and will not change during another power down/up.

Locked	Action	Description of sensor setup
	Sensor running	Last setup
	Power OFF	-
	Power ON (Startup delay 600ms)	No Self-Teach. The sensor is now in running mode

Re-calibration of the sensor

If needed, a new Self-Teach can be activated by disconnecting the white wire from (+) supply, and then connect it again to (+) supply. You have now activated a new Self-Teach and the sensor will now re-calibrate and calculate a new sensitivity according to the application. Be sure that the application is empty – no object to detect.

Self-Teach	Action	Description of sensor setup
Force new Self-Teach	Disconnect white wire	-
	Connect white wire to (+) supply	Self-Teach: Red LED blinking The sensor is now in running mode
	Power OFF	-
	Power ON (Startup delay 600ms)	The sensor is still in running mode

Every time the white wire is being disconnected from (+) supply, the Self-Teach function will be initiated and take place when connecting it again to (+) supply

Self-Teach	Action	Description of sensor setup
Force new Self-Teach	Power OFF	-
	Disconnect white wire	-
	Power ON (Startup delay 600ms)	-
	Connect white wire to (+) supply	Self-Teach: Red LED blinking The sensor is now in running mode

Remote teach-in

It is possible to teach-in either background or object, like the CAxxCLL sensors with normal teach-in function.

Teach-in Background

Teach-in	Action	Description of sensor setup
Remote Teach-in background	Disconnect white wire	-
	Be sure that the application is empty Connect the white wire to (-) supply > 3 sec. Remove the wire during the next 3 seconds.	The red LED will flash once per second Remote teach-in of background
	Connect white wire to (+) supply	Self-Teach: Red LED blinking The sensor is now in running mode

Teach-in Object

Teach-in	Action	Description of sensor setup
Remote Teach-in object	Disconnect white wire	-
	Be sure that the application is with object. Connect the white wire to (-) supply > 6 sec. Remove the wire during the next 3 seconds.	The red LED will flash twice per second Remote teach-in of object
	Connect white wire to (+) supply	The sensor is now in running mode

Teach-in Background and Object

Teach-in	Action	Description of sensor setup
Remote Teach-in of background and object	Disconnect white wire	-
	Background: Be sure that the application is empty. Connect the white wire to (-) supply > 3 sec. Remove the wire during the next 3 seconds.	The red LED will flash once per second Remote teach-in of background
	Object: Be sure that the application is with object. Connect the white wire to (-) supply > 6 sec. Remove the wire during the next 3 seconds.	The red LED will flash twice per second Remote Teach-in of object
	Connect white wire to (+) supply	The sensor is now in running mode

Toggle between normally open and normally closed

It is possible to toggle between normally open and normally closed by means of the teach-in function.

Teach-in	Action	Description of sensor setup
Normally open <> Normally closed	Disconnect white wire	-
	Connect the white wire to (-) supply > 9 sec. Remove the wire during the next 3 seconds.	The red LED will flash three times per second Toggle between NO and NC
	Connect white wire to (+) supply	The sensor is now in running mode