

# MODEL CG NEW CAPACITANCE POINT LEVEL SENSOR



## Features

- Patent pending principle
- Free from initial calibration
- Wide sensitivity range
- Resists conductive coating problem
- Highly stable detection
- Easy span calibration
- LCD display calibration and adjustment

## General Description

Conventional Radio Frequency and Admittance sensors are typically used as inexpensive solutions for point level detection, but they are often times unreliable. The model CG provides reliable, simple, and cost effective point level detection of liquids, solids, and adhesive conductive medium. Sophisticated application with fluids, operation conditions that requires periodical re-calibration with conventional simple sensors due to the deviation of working conditions like Fluid's chemical configuration, Humidity, Temperature, Resistance value factor, build up can not normally be covered with conventionally simple capacitance level sensors.

Our new model CG can work well both to simple fluids, difficult fluids, and sophisticated environment due to the patent pending circuitry.

## Operational Description

The model CG consists of an oscillation circuit and a detection circuit. Both circuits synchronize at a constant 1.4MHz frequency in the air,  $f_1 = 1/2 \pi \sqrt{LC}$ .

The frequency of detection circuit is changed from the air to in the medium by taking in the capacity of the medium,  $f_2 = 1/2 \pi \sqrt{L(C+\Delta C)}$ .

The oscillation circuit automatically follows to synchronize with the frequency of detection circuit. When the resonance frequency shifts to the detection set point, the relay is energized.

## Ordering Information

|       |                   |
|-------|-------------------|
| CG-2N |                   |
| 250R  | R3/4, L=250mm     |
| 450R  | R3/4, L=450mm     |
| 450T  | NPT3/4, L=450mm   |
| CG-2N | 250R = CG-2N-250R |

## Key Features and Benefits

- Patent pending circuitry  
The CG consists of an oscillation circuit and a detection circuit, and the frequencies of these two circuits are automatically synchronized. This function provides Free from Initial Calibration, Wide Sensitivity Range, Resist Build up Problem, and Highly Stable Detection.
- Easy span calibration  
By simply pushing the ENT button, the CG will check the dielectric constant of medium, and automatically set the SPAN point.
- Easy Programming  
Programming of the CG is not difficult. The build in 16 bits microprocessor provides quick program for sensitivity, fail safe, delay time, desired relay ON/OFF set points, and so on as optional parameters.
- Easy to read LCD  
The CG has 4 digit and 8 segment graphic LCD in the housing. It enables you to judge the current operation status and build up conditions on the probe at a glance, and to easily set optional parameters.

## Specifications

| Model                 |           | CG-2N   |
|-----------------------|-----------|---|
| Drawing               |           |   |
| Mounting              |           | R3/4 or NPT3/4  |
| Supply Power          |           | 100 to 240V AC $\pm 10\%$ , 50/60Hz   |
| Power Consumption     |           | Approx. 5VA Max.  |
| Relay Output          |           | 1 SPDT, 250V 3A AC, 30V 3A DC (Resistive)<br>C-NO: Normally Open contact<br>C-NC: Normally Closed contact |
| Detection Time Delay  |           | Programmable between 0 to 25.5 seconds  |
| Operating Temperature | Housing   | -25°C to 65°C   |
|                       | Electrode | -25°C to 85°C   |
| Maximum Pressure      |           | 1MPa / 10bar  |
| Maximum Humidity      |           | 95% RH  |
| Sensitivity           |           | Dielectric constant 1.2 Min.  |
| Material              | Housing   | ADC12   |
|                       | Electrode | 316SS   |
|                       | Insulator | PTFE  |
|                       | O-ring    | Viton   |
| Cable Entry           |           | G1/2 or 1/2-14NPT   |
| Protection            |           | IP65  |
| Fail safe             |           | High or Low by program  |
| Length of Electrode   |           | 250mm or 450mm  |