

SCREENED 2-ELECTRODE CAPACITANCE SENSOR FOR USE WITH LIQUIDS

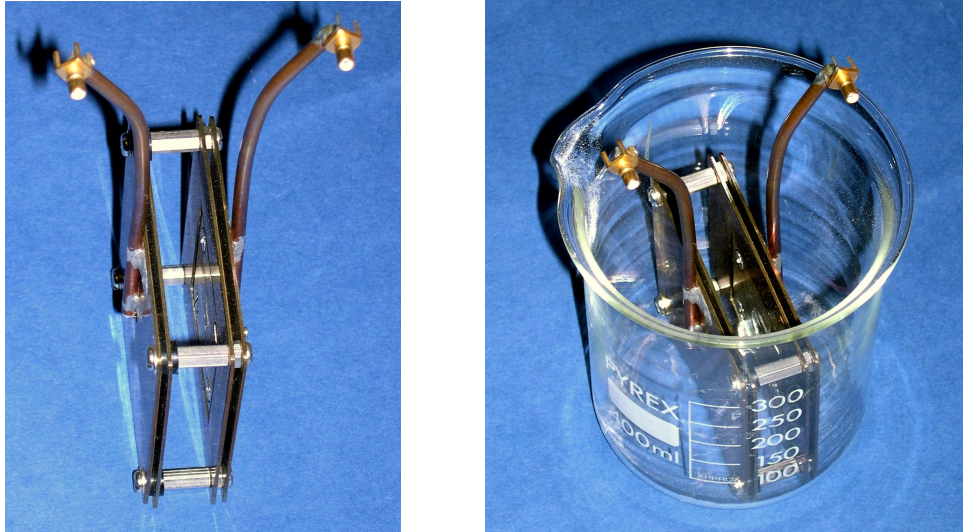


Figure 1. PTL OS100 Capacitance sensor

OVERVIEW

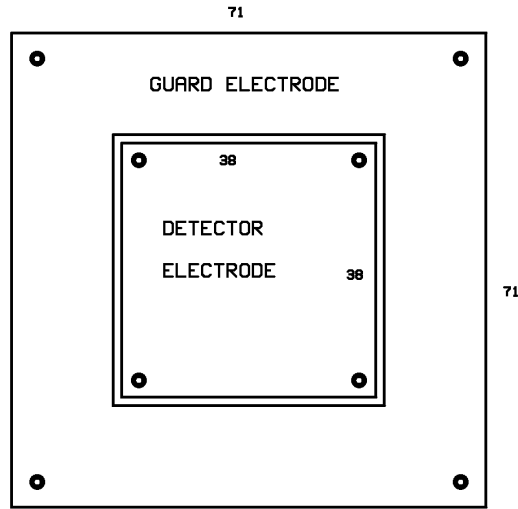
The **PTL OS100** is a screened single-electrode-pair parallel-plate capacitance sensor which is intended primarily for measuring the dielectric properties of insulating liquids such as oil. The sensor will fit inside a standard 500mL laboratory beaker containing the oil or other liquid sample.

The sensor has a nominal capacitance of 1pF in air and this capacitance will increase linearly with the relative permittivity (dielectric constant) of the liquid sample when it is immersed in the liquid.

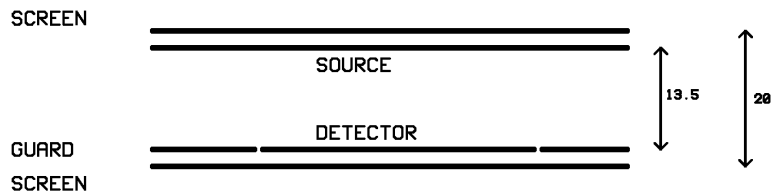
The electrodes are fabricated from brass sheet and the sensor electrode details are shown in figure 2. the detector electrode is contained within an earthed guard electrode and the excitation electrode is larger than the detector electrode to minimise fringing effects.

The sensor is terminated in two miniature SMB connectors and can be used with any suitable stray-immune capacitance measurement systems.

ELECTRODE CONFIGURATION



PLAN VIEW SHOWING DETECTOR ELECTRODE



SIDE ELEVATION SHOWING ALL ELECTRODES

NOTE: ALL DIMENSIONS mm

Figure 2. Sensor electrode layout

Figure 2 shows the electrode layout. The two outer electrodes are earthed screens. The inner top electrode is the excited (source) electrode and the lower middle electrode is the detector electrode, which must be maintained at virtual earth potential by the capacitance measurement system. The detector electrode is smaller than the source electrode and sits within an outer earthed screening electrode to minimise the effects of fringing of the electric field between the source and detector electrodes.



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Please contact us for further information.

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