

8-ELECTRODE CAPACITANCE SENSOR FOR USE WITH LIQUIDS



Figure 1. PTL LS100 ECT sensor

OVERVIEW

The **PTL LS100** is an 8-electrode ECT sensor constructed on a 500ml glass measuring cylinder of internal diameter 48mm. The sensor contains 1 set of 8 capacitance measurement electrodes and 1 set of driven guard electrodes located at each end of the measurement electrodes as shown in figure 2.

The sensor is primarily intended for use with liquid samples and is particularly suitable for accurate measurement of relative permittivity when used with a table ECT measurement system. It can also be used with samples in powder or granular form.

The sensor is terminated in 2 sets of 8 x RG174 coaxial measurement leads of approximate length 1.25m and terminated in SMP miniature coaxial connectors.

ELECTRODE CONFIGURATION

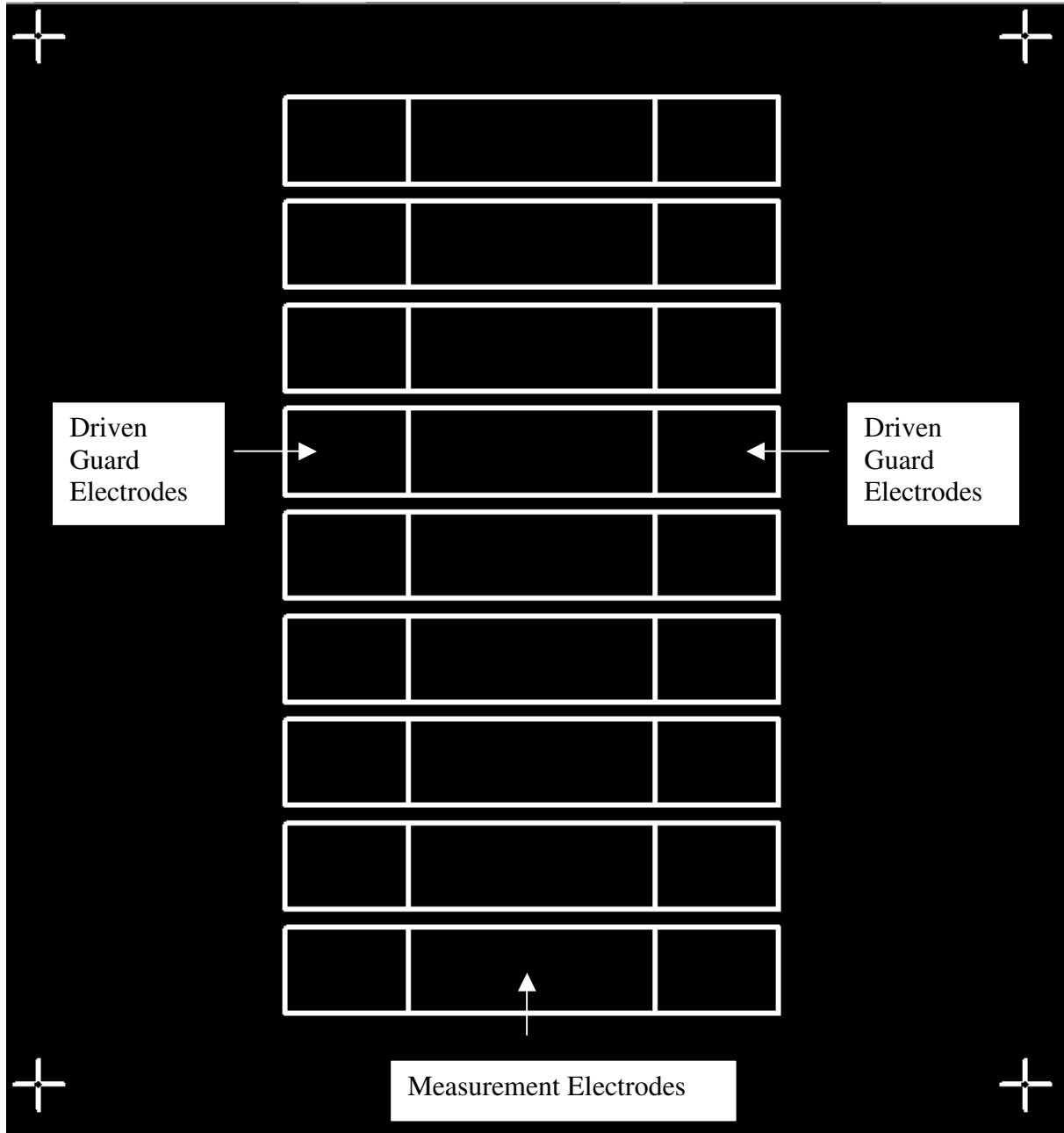


Figure 2. Sensor electrode layout

Figure 2 shows the electrode layout (9 electrodes are shown as the join is made along the centre of one electrode when it is wrapped around the measuring cylinder).

The sensor must be used with an ECT system having at least 8 measurement channels together with at least 8 driven guard electrode channels. Suitable ECT systems available from PTL are the **PTL 300E** series and the **TFLR5000** series measurement systems.



SPECIFICATIONS

Number of electrodes:	8 Measurement and 8 Driven guards
Measurement Electrode length	50mm
Axial guard width	2.5mm
External measuring cylinder diameter	53mm nominal
Internal measuring cylinder diameter	48mm nominal

Empty Capacitances (fF)

Src

1 433.43 33.58 17.81 14.97 17.81 34.82 436.39
2 482.32 35.14 18.84 15.10 18.66 35.58
3 477.44 34.71 19.34 16.06 18.61
4 477.74 36.43 19.31 15.34 -0.87
5 447.19 34.57 17.79
6 472.64 33.96
7 469.66

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