Chapter 2 (Book 2)

Two-port measurement, four-wire technique vs. dual case

Parasitic and cross-effects in sensing elements:

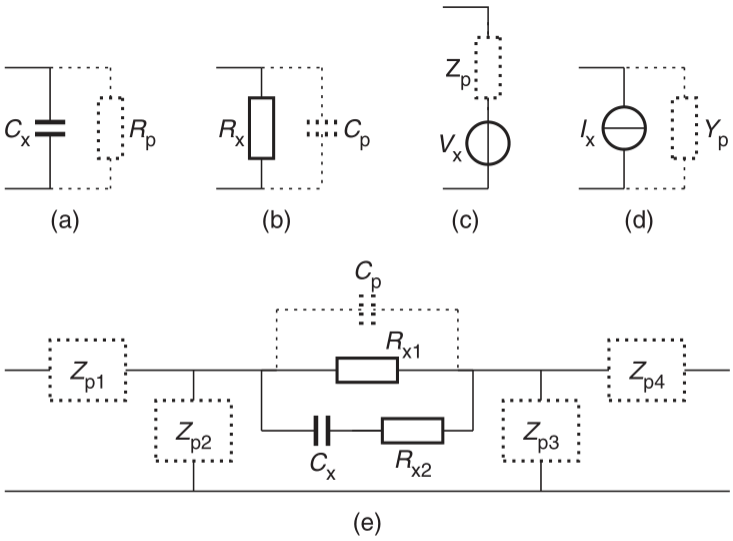

Figure 2.4 Examples of equivalent electrical circuits modeling some typical sensing elements and their parasitic electrical components: (a)–(d) simple elements; (e) a more complex sensing element

(a) Leakage current can cause parasitic resistance which shunts the sensor capacitance
(b) When a resistive sensor is connected with a long cable wire, the cable capacitance introduces a shunting capacitor
(c) Voltage generating sensors have a high internal resistance,
(d) Current generating sensors, input voltage and impedance should be as low as possible to reduce the effect of parasitic shunting resistance

"The quantization noise introduced by the digitization is proportional to the sampling rate and inversely proportional to the period Tx."

1/f noise

Resistance is a concept used for DC (direct currents), and *impedence* is the equivalent concept used in AC (alternating current)