

the first impedance element and the impedance converter are included in a negative feedback loop of the operational amplifier, and

the capacitor and the electrostatic capacitance detection circuit are located adjacently.

2. An electrostatic capacitance detection circuit that outputs a detection signal corresponding to electrostatic capacitance of a capacitor to be detected, comprising:

an impedance converter of which input impedance is high and output impedance is low;

a first capacitive impedance element;

an operational amplifier;

an AC voltage generator that applies AC voltage to the operational amplifier; and

a signal output terminal that is connected to an output of the operational amplifier,

wherein an input terminal of the impedance converter is connected to one end of the capacitor and one end of the first impedance element,

the first impedance element and the impedance converter are included in a negative feedback loop of the operational amplifier, and

the capacitor, the first impedance element and the impedance converter are located closely.

3. The electrostatic capacitance detection circuit according to claim 1 or 2, further comprising a resistance element connected in parallel with the first impedance element.

4. The electrostatic capacitance detection circuit according to any of claims 1 through 3, further comprising a second impedance element connected between the AC voltage generator and the operational amplifier.

5. The electrostatic capacitance detection circuit according to any of claims 1 through 4, further comprising:

an inverting amplification circuit that inverts a signal at the signal output terminal; and

an adding circuit that adds up an output signal of the impedance converter and an output signal of the inverting amplification circuit.

6. The electrostatic capacitance detection circuit according to any of claims 1 through 5,

wherein the one end of the capacitor and the input terminal of the impedance converter are connected each other by a non-shielded electric conductor.

7. The electrostatic capacitance detection circuit according to any of claims 1 through 6,

wherein the capacitor and the electrostatic capacitance detection circuit are stored in a shield box.

8. An electrostatic capacitance detection device comprising:

a capacitive sensor as a capacitor to be detected that detects a physical quantity according to a change in capacitance; and

the electrostatic capacitance detecting circuit according to any of claims 1 through 7, which is implemented on a printed circuit board or a silicon substrate and fixed to the capacitive sensor.

9. A microphone device comprising:

a capacitor microphone as a capacitor to be detected; and

an electrostatic capacitance detection circuit according to any of claims 1 through 7.

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