Lc interface patent



Overview

A method of interfacing a LC sensor with a control unit is provided. The control unit may include first and second contacts, where the LC sensor is connected between the first and the second...

Key Takeaways

LC interface patents describe methods and systems for connecting LC sensors to control units, enabling precise oscillation monitoring and voltage regulation.

Overview of L

C Sensor InterfacingLC sensors, consisting of an inductor (L) and a capacitor (C) forming a resonant tank circuit, are widely used in applications such as electronic proximity sensing, metal detection, and rotation sensing. The core principle involves charging the capacitor and then allowing it to oscillate with the inductor. The oscillation characteristics, such as frequency and damping, change in the presence of conductive objects, enabling detection.

Key Patented Methods

Oscillation Control and Monitoring Patents describe methods where the LC sensor is connected between two contacts of a control unit. The oscillation of the LC circuit is initiated by charging the capacitor and then allowing it to discharge through the inductor. The voltage at the second contact is monitored, which reflects the combined voltage of the first contact and the LC sensor.

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This allows precise characterization of the oscillation and detection of changes caused by nearby conductive objects. Voltage Regulation Techniques To maintain accurate sensing, the voltage at the first contact can be varied to ensure the voltage at the second contact remains within defined upper and lower thresholds. Some methods involve generating a counter-oscillation at the first contact, phase-shifted relative to the LC sensor oscillation, to stabilize the signal and prevent saturation.

Damping and Signal Analysis The resistance in the LC circuit influences the damping factor, while the inductor and capacitor primarily determine the oscillation frequency. Patents cover techniques to analyze damped oscillations, which are faster in the presence of metallic objects, providing a reliable sensing mechanism.

Applications and Advantages

Proximity Detection: Detecting metallic objects or components in industrial or consumer electronics. Rotation Sensing: Measuring rotational positions or speeds using inductive LC sensors. Signal Stability: Voltage regulation and counter-oscillation methods improve measurement accuracy and reduce noise.

Energy Efficiency: Optimized LC interfacing reduces power consumption while maintaining sensitivity. Notable PatentsU. S.

Patent 9,897,630: Describes a method of interfacing an LC sensor with a control unit, including oscillation initiation, voltage monitoring, and voltage regulation to maintain signal within thresholds. European Patent EP3021488: Covers techniques for LC sensor interfacing, including damped oscillation analysis and practical circuit arrangements for sensing applications. Patent Application US20160011235: Details methods for varying the voltage at the first contact, including counter-oscillation and threshold-based adjustments to optimize sensor performance.

These patents collectively provide a comprehensive framework for designing LC sensor interfaces, ensuring accurate detection, stable operation, and adaptability to various sensing applications.

Article Content

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A method of interfacing a LC sensor with a control unit is provided. The control unit may include first and second contacts, where the LC sensor is connected between the first and the second...

Method of interfacing an LC sensor and related system

A method of interfacing an LC sensor with a control unit is described. The control unit may include first and second contacts, and the LC sensor may be connected between the first and

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A SYSTEM FOR INTERFACING AN LC SENSOR, RELATED

For example, LC sensors may be used as electronic proximity sensors which are able to detect the presence of a conductive target. Some common applications of inductive sensors include,

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System, related method, and computer program product for

It summarizes the technical point description of the patent document. A sensor and interface technology, applied in the field of interface connection with LC sensors, can solve the problems of high cost and

LC Connector and Transceivers

The LC connector is the best choice for SFF interfaces today. As a division of Lucent Technologies, OFS released the LC connector to the market in 1996. Since then, over 20 companies have licensed the

Patent Terms Glossary: Your Guide To The Language of Patents

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for a user. Such interfaces optionally complement conventional mechanisms for providing hapt c feedback. Such interfaces reduce the number, extent, and/or nature of the inputs from a user by

SFP Fiber Optic Connector Types: LC, SC, MPO Explained

This approach supports scalable infrastructure while maintaining LC interfaces at the SFP port level. RJ45 (Copper Interface, Not a Fiber Connector) RJ45 is not a fiber optic connector but appears in

IgG-like bispecific antibody platforms with built-in purification ...

In particular, heterodimerization of HCs and cognate HC-LC pairings need to be ensured [1, 2]. In practice, HC heterodimerization is mainly achieved through engineering of the CH3 domain

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Apple U.S. Patents, Patent Applications and Patent Search

Apple Patents by Type Apple Patents Granted: Apple patents that have been granted by the United States Patent and Trademark Office (USPTO). Apple Patent Applications: Apple patent applications

System for interfacing an LC sensor, related method and computer ...

A sensor and interface technology, applied in the field of interface connection LC sensors, can solve problems such as high cost and low power

Patent Filing For AI-Assisted Brain-Computer Interface Systems.

1. Introduction to AI-Assisted Brain-Computer Interface Systems A Brain-Computer Interface (BCI) is a technology that enables direct communication between the human brain and

Chapter 2 Integrating LC and MS

Integrating LC and MS Chapter 2 introduces the detailed configuration of the LCMS instrumentation. It generally consists of a LC separating system, a mass analyzer and the LCMS interface API unit.

Lucent connector typed duplex connector

A LC-typed duplex connector includes a connecting head assembly, a boot assembly and a handle. The handle includes a first elastic structure portion, a second elastic structure portion and a

SFP LC Connector: Everything You Need to Know

What is an SFP LC Connector? Understanding the SFP Fiber Transceiver The SFP (small form-factor pluggable) fiber transceiver is a small, hot-swappable unit that works with

LC connector and method of assembly

LC connectors are standard industry connectors having generally fixed external size and geometry. However, the manner in which internal parts of LC connectors are conventionally designed and

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