



US006240778B1

(12) **United States Patent**
Hannan et al.

(10) **Patent No.:** **US 6,240,778 B1**
(45) **Date of Patent:** **Jun. 5, 2001**

(54) **LIQUID LEVEL POINT SWITCH SENSOR**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/033,271**

(22) Filed: **Mar. 2, 1998**

(51) Int. Cl.⁷ **G01F 23/00**; G01F 23/26; G01R 27/26

(52) U.S. Cl. **73/304 C**; 73/304 R; 324/664; 324/689; 324/690; 324/694; 324/696; 324/697

(58) Field of Search 324/664, 690, 324/689, 694, 696, 697; 73/304 R, 304 C

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(57) **ABSTRACT**

A liquid level sensor for detecting when an upper level of a liquid in a reservoir has reached a predetermined or critical point in the reservoir. The sensor includes a first input plate and a second input plate disposed concentrically relative to the first input plate. Each of the input plates are further of a shape such that an imaginary line extending through the centroid of the first input plate divides each of the first and second input plates approximately in half. An output or receiver plate is positioned closely adjacent the two input plates. The input plates are further disposed in the reservoir such that the centroid is at the predetermined or critical level in the reservoir. The two input plates are alternately electrically excited and the signals coupled to the output plate are detected and repeatedly compared against one another. The output signals will differ in magnitude because of the difference in the dielectric constant of air and the liquid in the reservoir. As the liquid level in the reservoir approaches the predetermined or critical point, the output signals coupled onto the output plate begin approaching one another. When the liquid level reaches the predetermined or critical point, the output signals are approximately equal in magnitude. A microcontroller detects this condition and generates a signal in response thereto. The performance or accuracy of the sensor is independent of changes in the dielectric constant of the fluid and, in some cases, is not affected by tilting or other changes in the orientation of the reservoir which might otherwise affect the accuracy of measurements taken by other forms of liquid level sensing devices.

22 Claims, 3 Drawing Sheets

