



Capacitive Level Sensor with Inductive Parameter Tracking

Leinfelden-Echterdingen, 15. July 2020. Due to varying gap dimensions level measuring at removable tanks is often challenging. EBE sensors + motion has developed an elegant solution to offset the manufacturing and mounting tolerances of the plastic parts used.

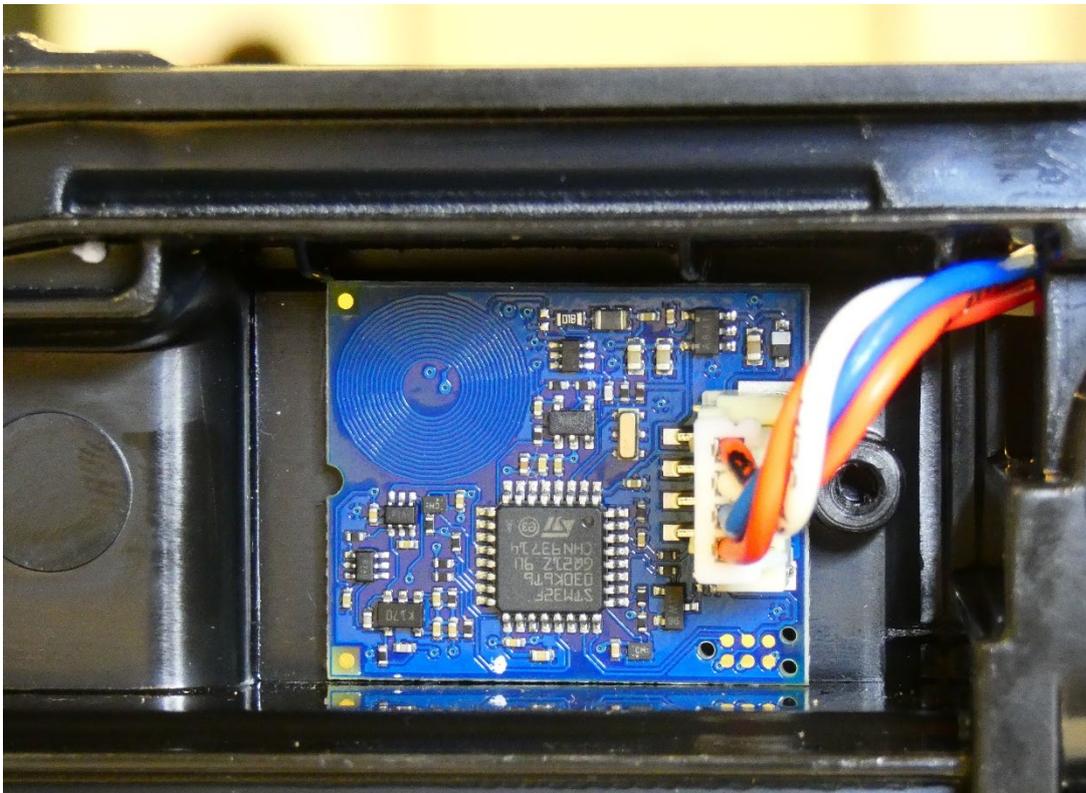
The company EBE sensors + motion offers a new sensor technology optimized especially for issues with plastic removable tanks. The manufacturing of plastic tanks and unit frames entails manufacturing tolerances that result in varying gap dimensions between tank wall and unit frame. Varying wall thicknesses, thermal deformation of the plastic parts over their lifetime or tanks not properly inserted can significantly influence the measuring distances. If the variations exceed two millimetres the level measurement by conventional capacitive sensors often presents a problem.

This effect is compensated by the new combi sensor from EBE. The capacitive level sensor with electrode structure and μ -controller is also equipped with an inductive proximity sensor. The filling level is measured from outside through the tank wall, the tank cavity and the unit frame. By means of the proximity sensor the actual distance between the sensor surface and the tank surface is measured. A small piece of aluminium is totally sufficient as counterpart for the induTEC[®]-sensor. Based on the individual air gap the parameters for the capacitive sensor are thus tracked in real time. The sensors are available both as filling level or limit value switch or as continuously measuring sensor.

Within the framework of the customer-specific sensor development the individual parameter sets are determined once and stored in the flash memory of the sensor. In this way, a calibration of the combi sensor by the customer or user is not required. An elegant solution with no additional electronic effort! The coil structure required for the proximity sensor is integrated on the PCB of the capaTEC[®]-sensor. The existing μ -controller simply takes over the electronic evaluation and calculation.

The shape and surface of the combi sensor can be individually adapted to the conditions and requirements of the individual application resp. the tank. From a sensor surface of 25x30mm material thicknesses and air gaps in total of seven millimeter or more can be bridged without any problems. Coatings and contaminations of the tank do not matter at all. The parasitic effects resulting from the coatings are compensated by the capaTEC®-algorithms.

The combi sensors are ideally suited for use with removable tanks n white goods, in the process industry, in mobile cleaning devices and in the sanitary and camping sector.



Picture text: Combi sensor with automatic air gap compensation for the touchless level measurement of non-conductive tanks

Picture source: EBE Elektro-Bau-Elemente GmbH

Picture file: 202007_EBE_Kombisensor_für_Wechseltank-Systeme.jpg

Publication of photos is licencefree and free of charge. Source information requested.

Short Profile

The company EBE Elektro-Bau-Elemente GmbH (brand name: EBE sensors + motion) based in Leinfelden-Echterdingen near Stuttgart develops and manufactures OEM-products in the fields of sensor and actuating technology, mechatronics and drive technology. The focus lies on capacitive and inductive sensors based on the technologies developed in-house and mechatronic solutions for industry, appliances, medicine and mobility. The sensor program also includes level sensors, pressure sensors, position sensors and capacitive buttons. Furthermore, EBE sensors + motion develops and manufactures customer-specific solenoids and robust rotary switches, buttons and encoders and adapts them to the customer requirements. The company sees itself as a competence center for the development and production of sensor systems and drive technology.

Contact

EBE Elektro-Bau-Elemente GmbH
External Press Officer, Doris Tischer
Sielminger Str. 63, 70771 Leinfelden-Echterdingen, Germany
Tel. +49 711 79986-0, E-Mail: press@ebe.de