

Marquardt launches water-resistant door handle sensor

### **A sensor for all weather conditions**

- Marquardt is the first supplier to launch a reliable water-resistant touch solution
- Superior Sensor Solution (S<sup>3</sup>) works flawlessly, even when exposed to weather and environmental influences, such as rain, ice or dust contamination
- New technology will initially be used in the automotive industry – other sectors could also benefit

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*Rietheim-Weilheim, November 12, 2020* – With the Superior Sensor Solution (S<sup>3</sup>), Marquardt, the mechatronics system specialist, has developed a capacitive sensor that functions flawlessly, even in damp and wet conditions. Its use in keyless systems for vehicles ensures that doors can be opened and closed reliably, even in rain and snow.

Conventional sensors are unable to distinguish between the touch of a finger and the impact of a raindrop. This is due to the fact that the human body and water have the same effects in terms of capacitance. If a door handle is wet or icy, previous sensors detect a change in capacitance similar to that of a hand when the change is in fact due to drops of water, for example. This can lead to malfunctions.

### **S<sup>3</sup> knows the difference.**

With the Superior Sensor Solution S<sup>3</sup>, Marquardt now offers a door handle sensor that will not be triggered by unwanted external influences. That's because S<sup>3</sup> does not respond to touch – it responds to approach. Where conventional sensors only measure the change in capacitance, the new sensor analyzes the origin of the change and adjusts its response accordingly. In other words: S<sup>3</sup> can distinguish between a user's hand and a raindrop.

“We are therefore able to solve all water-related vehicle malfunctions. This applies not only to door handles, but also to other areas, such as the fuel tank cap, trunk, bonnet and key panels on the B-pillar,” explains Johannes Mattes, who is responsible for the technical development of door handle sensors for Marquardt’s customers across the globe.

### **Adaptation to customer requirements thanks to modular design**

While the standard version of the S<sup>3</sup> includes one sensor for measuring the change in capacitance, the dual-sensor version has two or three sensor surfaces. In addition to the components for opening and closing the doors, door handle lighting and lighting for the area in front of the vehicle can also be installed on the longer circuit board. All S<sup>3</sup> systems are prepared for an NFC (Near Field Communication) function extension. An integrated antenna then allows the user to open and close the car with their smartphone (iOS or Android). If necessary, the NFC system can be updated by means of flashing in order to adapt the technology to the latest generation of smartphones. The connection to the on-board electronics is established via interfaces for LIN X.X. and CAN 2.0/FD. The S<sup>3</sup> sensor fits underneath almost all closed surfaces, such as plastic, tile, wood or leather, which means it does not disturb the vehicle’s aesthetics.

The modular principle of its product development platforms allows Marquardt to respond to the individual wishes of its customers in a targeted manner and to develop the right solution for each model together with the OEM.

### **Broad range of applications**

The new touch solution is not only an optimum solution for the automotive industry, it also lends itself to other industries in which sensor-controlled products come into contact with water. Such industries include, for example, construction and agricultural

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machinery, vessels, power tools, high-pressure cleaners, housing technology or household appliances.

“S<sup>3</sup> is an option wherever touch solutions are possible and wherever water penetration is possible. This also applies to everyday household applications, such as turning the shower on and off or controlling the stove,” explains Johannes Mattes.

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**Press photo:**



**Marquardt\_Press\_S3\_Door\_Handle\_Sensor\_1:** The Marquardt S<sup>3</sup> door handle sensor does not respond to touch but to approach.



**Marquardt\_Press\_S3\_Door\_Handle\_Sensor\_2:** The Marquardt S<sup>3</sup> door handle sensor can distinguish a hand from a raindrop.

### About Marquardt

Marquardt, a family-run company founded in 1925 and based in Rietheim-Weilheim, Germany, is one of the world's leading manufacturers of mechatronic switching and operating systems. As mechatronics specialists, Marquardt's range of products – including operating components, vehicle access and drive-authorization systems, and battery management systems for electric vehicles – are used by our many well-known clients in the automotive industry. Marquardt's systems are also used in household appliances, industrial applications and power tools. Marquardt Group employs 10,500 members of staff worldwide at its 20 locations in four continents. The company generated over €1.3 billion sales revenue in the fiscal year 2019. Each year, Marquardt invests around 10% of its revenues in research & development.

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