

Smart charging plug lock for electric vehicles and charging stations

Safe Charging with the E-Lock

- Marquardt is launching its modular e-lock solution for all common vehicle charging plugs
- Noticeably quieter and robust high-end gearbox with detection of up to five different lock bolt positions (resistance measurement)
- Modular design for individual range of functions, plus easy integration into all electric vehicles and charging stations

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Rietheim-Weilheim, Germany, August 2021 – Marquardt has developed a new locking system – the e-lock – that improves the safe charging process for vehicles with an electric or plug-in hybrid drive. Noticeably quieter, smaller, and more stable, the charging plug lock from the mechatronics specialist adds value and safety to drivers during the charging process. The detection of up to five lock bolt positions reliably identifies incorrect positions caused by dirt, ice, or deformation of the charging plug. The e-lock product platform's modular design allows individual adaptations to vehicle manufacturers' requirements, e.g. in the scope of functions and integration in the vehicle.

Individual functionality – faster time to market

Charging plug locks secure the plug against unexpected unplugging in electric vehicles and charging stations during the charging process to prevent personal injury or malfunctions and damage to the system. The lock also helps to protect against tampering with or theft of the charging cable.

With the E-Lock, Marquardt is offering a platform solution that can be quickly and flexibly adapted to customers' requirements and requests, while also significantly shortening the time to market. Individual changes within functionality can include mounting position (e.g. with a clip or screw connection), dimension specs (e.g.

the bolt's shape and extension length depending on the vehicle model), and connection configuration (e.g. by cable [pigtail] or in a connector configuration). Its small size of 50.5 x 44 x 23 mm means that the e-lock can also be easily integrated into the charging input unit in the smallest of spaces. For example, in electric trucks or buses, as well as in cars and charging columns.

Marquardt's e-lock is setting new standards

A number of improvements have contributed to Marquardt's e-lock system not only being a safer option, but quieter option. The lock's high-quality, swell-resistant plastic ensures a long lifetime of robust stability. The switch guarantees 60,000 locking cycles and up to 100,000 locking cycles (after prior technical coordination). The self-locking e-lock system provides maximum protection against tampering. Marquardt is, therefore, exceeding manufacturers' current requirements. The optimized, extremely quiet high-end gearbox also offers electronic measurement of up to five lock bolt positions, refining the detection of possible sources of error in the charging plug's positioning. If the charge control fails following a technical defect, the E-Lock can be unlocked mechanically. In this case, the charging plug can be disconnected manually and the journey is guaranteed to continue.

Marquardt's electro mobility-related expertise

As a technology service provider to the automotive industry and one of the world's leading mechatronics specialists, Marquardt develops and manufactures a wide range of solutions for electric, hybrid and fuel cell vehicles. Its portfolio includes battery management systems, charging and converter systems, control units, sensors and electromechanical components like the new e-lock. Marquardt products meet the highest automotive requirements and are used in millions of vehicles all over the world.

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Marquardt_Press_E-Lock_1: The Marquardt E-Lock can be integrated into all common vehicle charging plugs and charging stations.



Marquardt_Press_E-Lock_2: The Marquardt E-Lock: for a safe charging process for vehicles with an electric or a plug-in hybrid drive.

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 electromechanical and electronic switches and switching systems. The products of the mechatronics expert are used by many well-known customers in the automotive industry and include operating components, vehicle access, driver authorization systems and battery management systems. The company's systems are also used in household appliances, industrial applications and power tools. Marquardt Group employs approximately 10,600 members of staff worldwide at 20 locations in four continents. The company generated 1.2 billion euros sales revenue in the fiscal year 2020. Each year, Marquardt invests around ten percent of its revenues in research & development.

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