



**Press Release**

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**Marelli presents new integrated Thermal Management Module for electric vehicles, improving efficiency, safety and driving range up to 20%**

Marelli launches its new **integrated Thermal Management Module (iTMM)** for electric vehicles, which allows the efficient combination of the vehicle's different thermal circuits into one single component to shape a more efficient thermal management system, ultimately increasing driving range, safety and flexibility.

An optimized thermal energy management is a key factor especially in electric vehicles, as the cooling and heating needs of components and passengers within the car require high energy consumption. Greater efficiency can be achieved by managing and controlling properly the three systems that most affect energy usage: the e-powertrain thermal system, the battery thermal system and the cabin thermal system.

While electric vehicles generally have a number of heat exchangers with a sole function, Marelli's integrated Thermal Management Module modularizes water-cooled heat exchangers, such as the chiller or water-cooled condenser, with a smart valve arrangement. By using this combined valve, which manages up to 6 channel combinations, the iTMM efficiently connects the three systems, exploiting their synergies and sharing components, to obtain optimized energy management. This reduces the total system complexity, while ensuring ideal cooling of the electric powertrain, high safety and ultra-fast charging of the battery and an optimal thermal comfort within the cabin.

Another improvement enabled by the iTMM is the efficiency in severe weather conditions and at low temperatures, that allows the increase of the vehicle's driving range up to 20%, when coupled with a heat pump system in winter conditions.

The integrated system has a reduced number of parts, with smaller size and weight, ensuring to carmakers simplicity of the assembly, architecture flexibility within the vehicle and competitive system cost. The module meets all the latest market requirements, such as ultra-fast charging with pre-conditioning and compliance with OBD (On-Board Diagnostics) standards.

Alongside this innovative technology, Marelli's Thermal Solutions division develops a full range of thermal systems to improve vehicle durability and performance, both for internal combustion engine and electric powertrains, maximizing the effectiveness through an efficient control and balance of thermal energy.

**About Marelli**

Marelli is one of the world's leading global independent suppliers to the automotive sector. With a strong and established track record in innovation and manufacturing excellence, our mission is to transform the future of mobility through working with customers and partners to create a safer, greener, and better-connected world. With around 50,000 employees worldwide, the Marelli footprint includes 170 facilities and R&D centers across Asia, the Americas, Europe, and Africa.