Supporting the Development of Next-generation In-wheel Motors

～Electric current sensor module～

次世代のインホイールモータ開発に貢献
～電流センサモジュール～

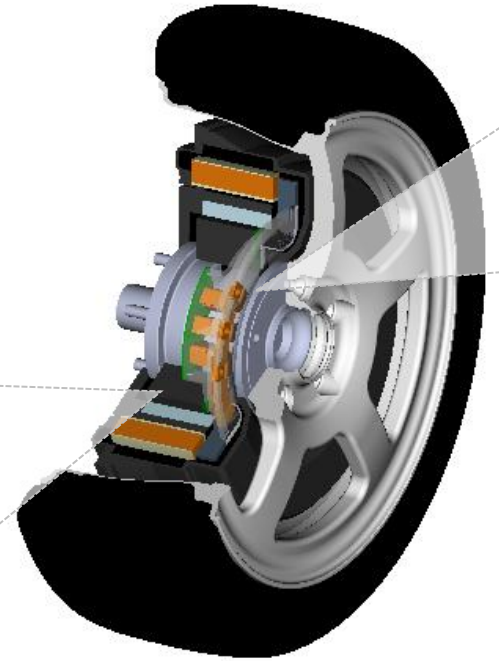
TOKAI RIKA

Collaboration between e-Gle and Tokai Rika

e-Gle

TOKAI RIKA

e-Gle is creating innovative electromechanical in-wheel motors that integrate a motor, inverter, and cooling system.



Tokai Rika’s current sensor and busbar technologies contribute to the development of the in-wheel motors.

Strengths of vehicles with e-Gle's in-wheel motors

Flexible packaging: As a motor is installed in each wheel, a vehicle interior can be freely designed, allowing a wide interior space with additional storage.

Energy-efficient: No reduction gears and no drive shafts mean less transfer loss and less power consumption.

Quick response: As each wheel is directly driven, the in-wheel motor produces sharp acceleration and braking performances than an electric motor centered in a car, offering more dynamic driving experience.

Torque vectoring: The in-wheel motor enables advanced torque vectoring, improving car movement stability and driving performance.

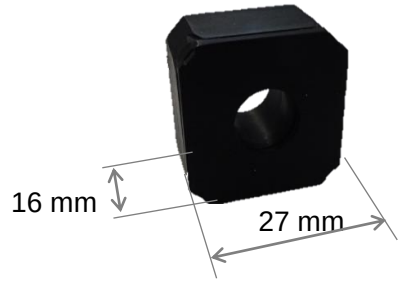
Tokai Rika customizes current sensors and busbars for the specifications of inverters or motors

Progress

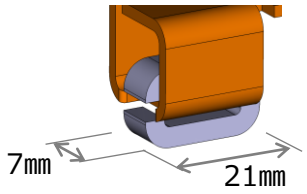
Challenge

Some current sensors and busbars do not properly fit the desired space.

Current sensor (Tokai Rika's general-purpose type)

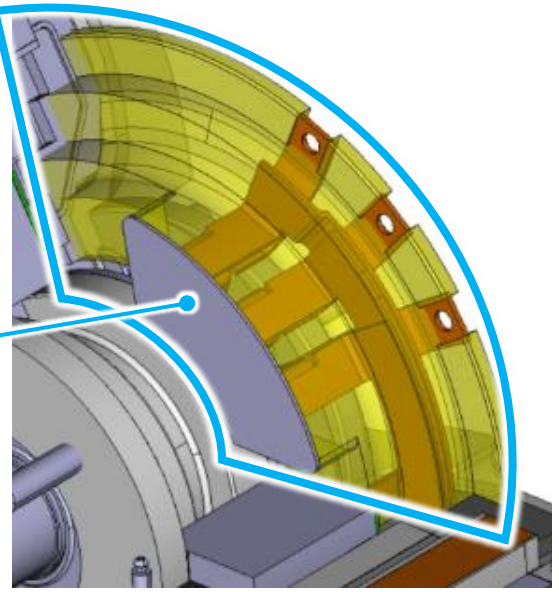


The capability is high enough to cover a wide range of electrical current amount from small to large currents.

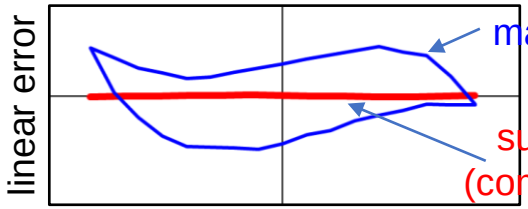


Reference: Radio-frequency sensor

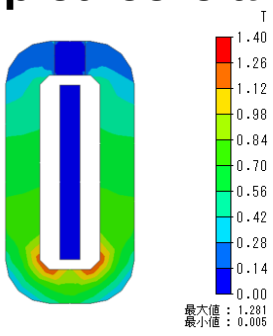
-Busbar placement in tight spaces with precision stamping/forming and insert molding technology
・Minimized core spacing and busbar spacing design with magnetic/thermal analysis



High-precision



Coupled core analysis



Lineup

Magnet type

Next-generation type