

### **Smart Parking System**

The “magnetic field variation amount” varies depending on the vehicle type and section of a vehicle. However, the engine section shows a “magnetic field variation amount” that far exceeds that of a vehicle parked in an adjacent parking space, regardless of vehicle type. The sensor is to be placed at one-third length from the front of a parking space.

Concerning the relationship between the vehicle orientation and the magnetic field variation. the “forward entry” is where a vehicle enters a parking space by forward movement and leaves by backward movement, the engine section passes above the sensor before a vehicle is parked at the time of entry and the engine section passes above the sensor again at the time of leaving. In both patterns of “backward entry” where a vehicle enters a parking space by backward movement and leaves by forward movement and is less common in the state of Kansas, and “pass-through entry” where a vehicle enters a parking space by forward movement and leaves by forward movement e.g., driving through, the engine section comes directly above the sensor when the vehicle is completely parked. In this way, there is a time when the engine section necessarily passes above the sensor when a vehicle is parked in a parking space