



Easy, secure and reliable absolute position determination of AGVs in industrial environments using RFID

Application:

AGVs that can determine their position along their path are frequently used in logistics and manufacturing environments. Determining the precise position of parked goods allows the AGV to quickly find temporarily-parked goods.



Robust HF read head with 100 mm of reliable read distance

Goal:

Using absolute positioning allows the material handling process to be automated and the location of both the goods and AGV to be tracked reliably throughout the plant.

Requirements:

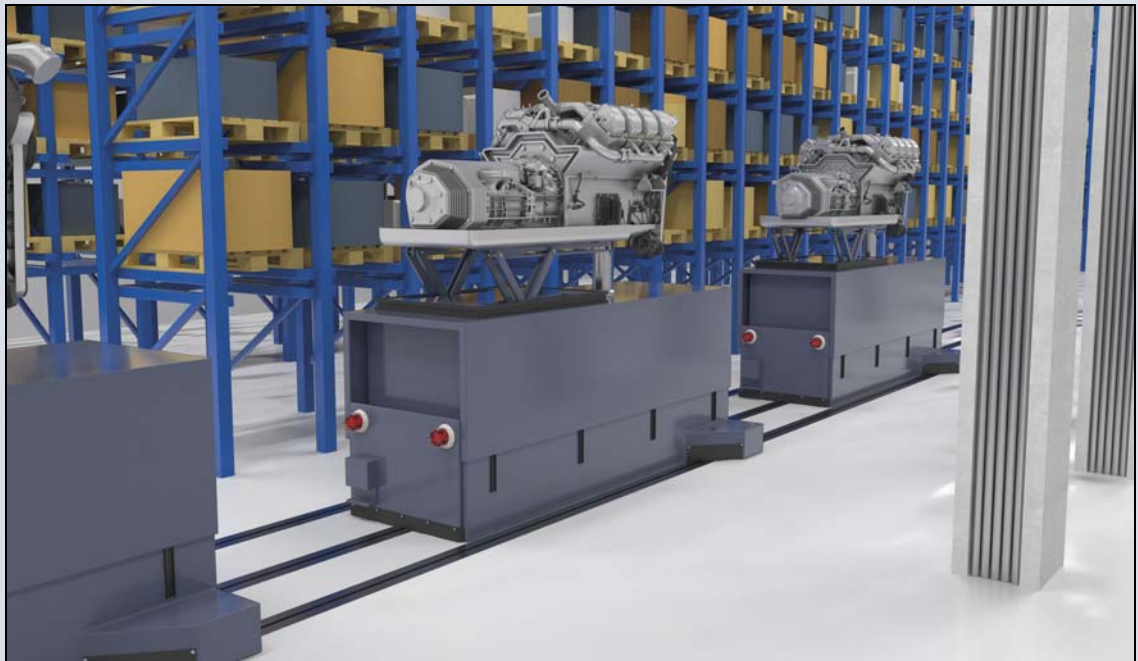
Robust tags that can be mounted in the floor. RFID readers mounted on the AGV must offer sufficient read range with a suitable lateral tolerance. When a tag must be replaced, the data contents of the replacement must match that of the original tag. Because AGVs are frequently powered through an inductive loop, the RFID solution must offer ample EMC resistance.

Customer advantage:

High degree of automation and precise system status. No misplaced material.

**What is being done:**

Most modern AGVs employ inductive energy coupling. Consequently, any product used on the AGV must offer ample EMC resistance in order to reliably work in the environment of large electromagnetic fields. AGVs travel along pre-programmed paths that can be changed to address different manufacturing demands. The absolute position of the AGV is determined by reading floor-mounted tags. Using this information along with data concerning the goods carried by the AGV allows the control system to create a simple lookup table so that the position of all products – on and off the AGV – is always known. This method is also suitable to determine the position of forklifts, cranes, skids, and similar material handling systems.



AGVs carrying engines in an automotive assembly plant

Floor-mounted tags act as position markers. The RFID read heads are mounted on the AGV.