

Solution Case Study



Major UK car manufacturer improves quality control, running costs & efficiency of engine production line using Eureka RFID.

The Eureka RFID tagging system provides highly accurate tracking and critical production data for automotive engines at the manufacturing plant, which has a long and proud tradition in providing quality products to consumers throughout the world.

The plant invests in leading edge technology to ensure they continually improve and enhance the high standards found within their production facilities. With the integration of a Eureka RFID system to accurately track engines throughout the production process these high standards can easily be achieved and maintained.

There are a variety of sophisticated automation systems in the manufacturing plant, all contributing to the production of their engines. The Eureka RFID tagging system involves over 300 high memory tags and 16 tracking antennas providing accurate tracking data, which is sent to the host PC database, enabling engine progress to be monitored at various work stations around the production plant.

The RF Tag

This application needed a bespoke enclosure designed to fit with the specific engine mounting

requirements and a tag with large writable data memory capacity. The Eureka high memory tag was chosen as this active tag has an impressive 1,000 writable data characters, second to none data reliability and boasts an excellent operational life. Powered by a long-life battery the tag transmits large amounts of data, accurately and very quickly, providing fast system communications.

Dependent on the tags usage these radio transponder tags will have an operational life of 3 to 5 years.

System Operation

When the tag is within range of a radio frequency field produced by one of the systems tracking antennas, it becomes active and starts to transmit its data. The radio frequency communications to and from the tag utilise low frequency inductive coupling and can therefore function through most non-conducting materials, allowing the system to work, if needed, in very difficult or harsh environments.

Using special anti-collision techniques, the Eureka system allows several rfid tags within the same interrogation field to be identified simultaneously. This provides fast, reliable and accurate data communication all the way along the production line.

There are a number of process stations on the production line, all of

which produce data relevant to each engine manufactured. At each of these stations a Eureka reader unit reads and writes specific data to the tag fitted to each engine assembly. In total the tag passes 16 tracking antennas placed at these stations along the production line. At the end of the production line the data collected by the tag from each station is then downloaded to a PC and stored on a database for ongoing traceability of the engine throughout its life.

Conclusion

By using the Eureka tagging system with high memory tags to uniquely identify each engine assembly, the production process is able to quickly collate reliable and accurate information relevant to the build of each engine. This undoubtedly assists in greater quality control and improves the overall running cost and efficiency of the engine production line within the production facility.



Production Line Tracking & Process Control Using Eureka RFID

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