



CASE STUDY - RAILSENSE

Custom Magnetic Solutions Propel RailSense's TempSense Solution

About RailSense

RailSense is a rapidly growing company specialising in the design, development and distribution of rail infrastructure monitoring solutions. Their innovative products contribute to a safer rail network for both consumers and workers throughout the UK rail network and beyond. RailSense offers a suite of Internet of Things (IoT)-enabled solutions that enhance rail network operations by:

- Automating processes that were traditionally manual
- Increasing efficiency and improving worker safety
- Providing accurate, continuous monitoring and feedback systems

“
I don't think there is another supplier in the UK that has access to the technical resources and capability that Magnet Store has
”

-John Ash

The Challenge

RailSense initially approached their existing supplier and, although they had a catalogue of magnets, they required a custom solution that differed from the standard offerings, specifically in dimensions and grade. Unfortunately, the supplier was unable to fulfill this unique request. Facing this limitation, RailSense decided to explore the market for a supplier capable of delivering custom magnets tailored to their precise application needs. Feedback from other suppliers indicated that the custom designs John had envisioned were deemed impossible to produce. They highlighted that any attempt at custom manufacturing would be a slow, laborious, and costly process, compounded by high minimum order requirements.

Faced with these obstacles and market limitations, the team was forced to rethink their solution, contemplating a redesign to accommodate the magnets available on the market. This adaptation, however, threatened to reduce the solution's overall effectiveness.

Feeling deflated and near defeat, RailSense decided to review the market one last time, where, fortunately, they discovered Magnet Store. Initially skeptical, expecting the same discouraging feedback, they were surprised when, after reviewing their designs, Magnet Store confirmed that their requirements could be met. Furthermore, upon understanding the magnet's application, Magnet Store provided valuable advice on modifications to the specifications that would enhance the solution's effectiveness. It was at this moment RailSense began to understand that Magnet Store was different, and much more than just an off-the-shelf magnet supplier.



The Solution – Magnetic Customisation Without Limits

RailSense designed the optimal magnet by customising its size, grade, temperature tolerance, surface finish, and coating, while Magnet Store produced it to their exact specifications. This bespoke approach ensured the magnet could withstand various environmental challenges. For instance, replacing the standard Ni-Cu-Ni coating with an Epoxy coating significantly improved its durability against the elements, minimising corrosion and enhancing the product's reliability and longevity. Additionally, the magnet was specially produced to tolerate temperatures up to 100°C, guaranteeing optimal performance even with occasional exposure to extremely high temperatures, which poses a risk of demagnetisation to standard neodymium magnets.

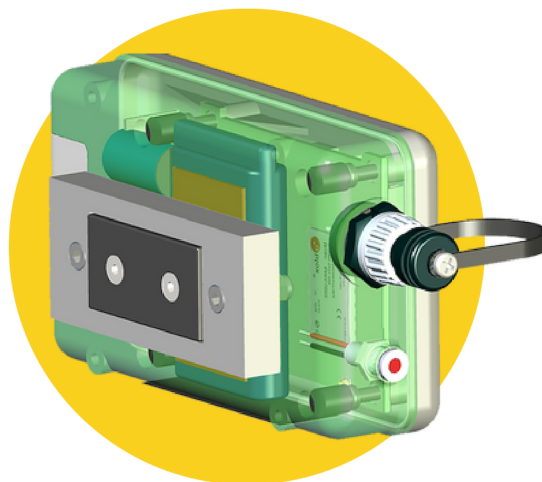
“With Magnet Store, they have revealed the art of the possible and been an enabling force for this product. The impossible now seems possible.”

-John Ash

After optimising the magnet specifications, RailSense requested a sample to verify the design firsthand. To their delight, the sample matched the description perfectly. Contrary to their initial expectation of a lengthy process, they were pleasantly surprised to discover that their custom-designed magnets would be ready for delivery within just 15 working days. This efficiency enabled them to swiftly commence prototype development and accelerate their product's market launch, achieving a new record for speed.

“The pre-purchase and post-purchase service has been excellent. Magnet Store are always very responsive to emails and happy to take a call. I can't fault the service.”

-John Ash



Through their experience with Magnet Store, the RailSense team has discovered that custom magnet solutions unlock many possibilities for future product designs. This has boosted their confidence in overcoming design and engineering challenges with magnets, leading to innovative solutions and enhancements in existing products, thus improving their efficiency and lifespan.

Key Benefits

Through partnering with Magnet Store, RailSense have been able to;

- Create true custom manufactured magnets to improve product design with the ability to customise; size, shape, grade, temperature resistance, coating, coercivity and magnetisation direction.
- Reduce time to market, with an impressive lead time of 10-15 working days on custom manufactured magnets.
- A cost-effective solution allowing them to provide a solution at a reasonable price point to the market.

“I have been nothing but impressed by Magnet Store's expertise. The price is great, lead time is brilliant and nothing is ever too much trouble or no request is ever off the table.”

-John Ash