

# RELIABLE FLOW MONITORING FOR MOBILE IRRIGATION AND DOSING STATIONS

## Background

4i Water Services developed a mobile irrigation and chemical dosing system to support arable farming, designed around two skid-mounted irrigation and chemical dosing stations. This setup enables precise, targeted delivery of water and nutrients across key farmland, improving operational efficiency and flexibility. Working with Process Instrument Solutions, the system was designed to ensure accurate and adaptable water and nutrient application across arable farmland.

## Challenge

Designing a mobile dosing and irrigation platform meant we needed flow measurement technology that could remain accurate and dependable despite movement, variable environments, and changing field conditions. In addition, the entire system had to be engineered so it could be easily transported across rough farmland terrain, withstand all-weather exposure, and operate reliably regardless of power availability or location. Farmers and suppliers rely on trustworthy data to ensure correct dosing and water distribution, so the system also needed to integrate cleanly with existing farm control processes while remaining robust and highly mobile.

## Solution

We engineered a high-precision mobile dosing system built around stepper-motor technology, enabling extremely accurate chemical delivery with zero slug dosing for consistent application. For measurement, we incorporated magnetic flow meters, ensuring stable and repeatable performance in a mobile environment. The system was fully integrated with a wireless communication link and a PLC-based control platform, allowing remote data access, real-time monitoring, and full programming capability directly from the field. This combination of advanced dosing control and intelligent telemetry created a highly adaptable and reliable mobile solution.

## Result

Our mobile irrigation and dosing stations now deliver real-time, reliable flow monitoring directly in the field. By combining 4i's engineering expertise with advanced dosing and monitoring technology, we've created a flexible, dependable, and future-proof solution that supports the evolving needs of modern agriculture.

