CASE STUDY

Case Study: FPI Mag® Meter Meets the Needs of a Water Distribution Plant in Italy

In the northern region of Italy lies a mountainous town named Malnate. Over 16,000 residents live in this city located in the province of Varese. Here, these residents depend on a continuous clean water supply without interruption. Therefore, any disturbance in the water distribution process will create a severe problem.

McCrometer, and channel partner Tecnova, were able to help meet the demands of this water distribution customer by identifying and supplying the necessary meter to satisfy their specific needs.

The Problem

Thanks to an abundance of water in the past, our customer was not measuring. However, now that resources are depleting, our customer must install a meter to monitor drinking water flow and discover any leaks in the pipe. Because of this, the company sought after a meter. There were several primary considerations when selecting a new meter.

Minimal Disruption. The customer's primary concern was to install a meter with no operational downtime. De-watering the lines was not an option for our customer, as they are responsible for supplying 100% of the town's water supply.

Accuracy and Repeatability. The accuracy and repeatability of a meter are critical to flow readings. Unfortunately, our customer's prior experience with meters only proved to have low accuracy rates and inconsistent measurements, leaving data useless.

Pipe Layout and Retrofitting. Due to aging pipelines, the customer needed a meter that could fit in a crowded layout without restructuring the pipeline. Therefore, having the ability to retrofit was a requirement.

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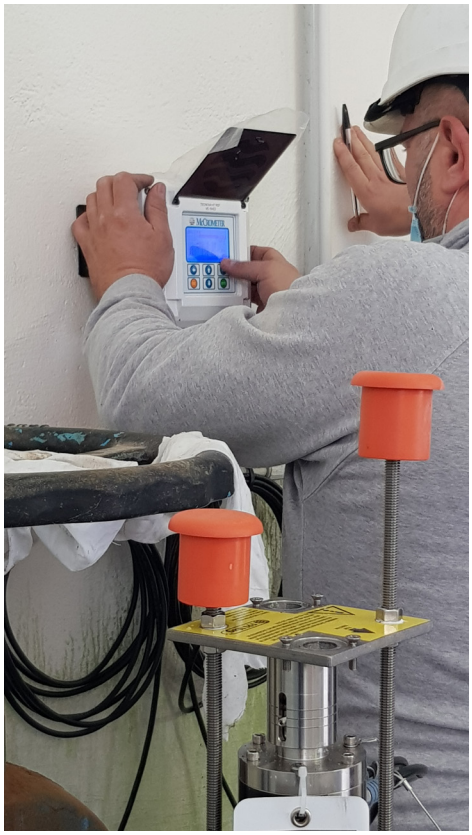

Data Acquisition. Our customer wanted to access meter data off-site; therefore, an easy connection to the existing telemetry system was a must.

Affordability. Meter pricing can be a deciding factor for some companies when selecting their meters. Therefore, it was important for this customer to find a budget-friendly meter that met all the listed needs.

The Solution

Tecnova connected with the customer and discussed various metering solutions. Once Tecnova conducted a site survey and displayed a demo unit, the customer selected a McCrometer FPI MagTM Meter. This meter gave the customer everything required to satisfy their needs.

FPI Mag - The Installation. The hot-tap installation process of the FPI Mag meter occurs without the need to interrupt service. Therefore, there is no need to dewater lines, cut pipe nor, weld flanges. In addition, McCrometer offers a wide range of sizing from 4"-138", giving our customers the versatility required to meet each specific need.

Our customer had a 10" (DN 250) pipeline with a very tight allowance for a meter. Before the installation, Tecnova did a site survey to get the mechanical measurements of the installation point. From there, Tecnova and McCrometer were able to manufacture a meter perfectly sized for the customer's needs. One week before the installation, our customer's technical service team prepped for the FPI Mag by installing a standard 2" ball valve in "hot-tap" mode without interrupting the supply.

On the day of the installation, Tecnova provided one serviceman to perform the installation & start-up of the meter. In total, the application install took one hour to complete. During this time, the Tecnova tech was able to walk our customer through the process and explain to them how easy connecting to their pre-existing telemetry system is.

FPI Mag - Accuracy, Repeatability, and Performance. Rivaling the Full-Bore Mag meter, the FPI has astonishing accuracy rates. The multi-electrode design offers a ±0.5% accuracy rate, unmatched by other insertion meters. In addition, because there are no moving parts, nothing will wear

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or break over time. Heavy-duty 316 stainless steel makes up the sensor body offering maximum structural integrity. Its robust construction is hermetically sealed and protected by NSF-certified 3M fusion-bonded epoxy coating.

McCrometer's ProComm Converter can offer a wide range of outputs, from 2 x 4-20 mA analogic and digital as standard to additional protocols like Hart or Modbus. Thanks to Built-in-Verification (BIV), the customer can be sure the flow meter is working correctly.

FPI Mag - The Retrofit. The customer's existing layout required a meter that did not need a standard straight pipe for installation. In addition, the install location had no diameters upstream or downstream, was near a DN 250 valve, a bypass, and a 90-degree curve. Due to these pre-existing pipeline restraints, the FPI Mag meter was the best solution for retrofitting a new meter that could accommodate all these specifications.

FPI Mag - Affordability. The FPI Mag meter is the perfect budget-friendly option that offers excellent accuracy rates with the most reasonable installation costs. The total cost of ownership can save customers up to 45%. These generated savings come from the absence of heavy equipment and additional labor needed by a full-bore install. This application was installed in less than one hour by a single Tecnova technician.

The Results

For this municipal water facility, Tecnova and McCrometer were able to meet every need of the customer. Tecnova offered best-in-class expertise and customer service to ensure our customer received the best meter for their needs.

"In the past, we had a single point insertion mag meter installed that gave us poor results. We were doubtful about installing an FPI due to our experience. We were wrong. It works as you promised, and you have given us much technical support. Usually, we receive meters in carton boxes, and nobody helps us in case of trouble. Also, the manual in the Italian language is a nice addition." - Water Distribution Customer.

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Since the initial install date, our customer has installed eight additional FPI Mag Meters. McCrometer's all magnetic flow meters operate under the principle of Faraday's Law of Electromagnetic Induction. It states that a conductor, such as water, moving through a magnetic field produces a directly proportional voltage to the velocity of the water moving through that field. The FPI Mag meter can use its multi-electrode sensing to provide accurate measurements without the need for long upstream and downstream straight pipe runs. This technology granted our customer the ability to optimize the existing pipeline by integrating a more accurate meter than before, leaving them extremely satisfied with the FPI Mag Meter.

Choosing the flowmeter best suited for an application will improve accuracy, repeatability, lowered maintenance costs, and promote a long life for the flow meter. In addition, its superior value in terms of installation cost and the low cost of ownership make the FPI Mag an excellent flow measurement choice for municipal water facilities.

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