

A Simple Check of Accuracy, Installation and Wiring

SITRANS F M electromagnetic flowmeter

Case Study - September 2001



water & WASTEWATER

The Siemens Flow Instruments (SFI) SITRANS F M Vericator for electromagnetic flow meters revealed faulty wiring and excessive lengths of unscreened signal cable during a field test at a Yorkshire Water installation

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Introduction

It takes accurate flow measurement to run a profitable business when you serve an area of 13,900 square kilometres and supply approximately 1,239 mega litres of water per day to industrial and domestic customers. This is how the world looks from Yorkshire Water Services Ltd.

In order to meet the requirements for accurate flow measurement, the company recently started an evaluation programme utilizing the benefits of the SFI SITRANS F M Verificator for electronic verification of SITRANS F M electromagnetic flow meters.

Since project start-up, engineers from Yorkshire Water and SFI together have evaluated and tested the Verificator on approximately 25 different SITRANS F M meters. The same meters were verified on a number of occasions in order to prove both the performance and consistency of the verification tool.

Two flow meters which had been installed at a service reservoir were included as part of the proving process. Their sensors were situated in individual chambers below ground level, while their transmitter were mounted in a common cubicle approximately 50 metres away.

The Verificator was applied in turn to each of the flow meters and during the verification both failed the insulation test, which is a part of the verification procedure.

The installation and wiring was checked for possible errors and by the process of elimination the wiring to the electrode connections on the transmitter was found to be incorrect. The wiring error was corrected, and subsequently repeated verifications were completed successfully.



Specifications met

Project manager Paul Crossley of Yorkshire Water was satisfied with the verification of the service reservoir installation:

“The Verificator identified the problem and then went on to pass the installation once the problem had been corrected. This gives us confidence that our specifications are met,” he states.

On a number of other installations in the Yorkshire Water supply network, the SITRANS F M Verificator detected excessive lengths of unscreened signal cable. Although this in itself does not cause system malfunction, additional uncertainty errors could be introduced.

“With this knowledge, brought about by the verification process, we can in future reduce the unscreened lengths of cable and optimize the flow meter performance on site”, Paul Crossley notes.

Due to this experience, he sees the Verificator not only as a convenient and simple to use tool for verifying SITRANS F M electromagnetic flow meters in the field. The device is also extremely useful for checking the installation, the wiring as well as confirming the integrity of the installation.