



## PROCESS INSTRUMENTATION

# Ideal for **challenging installations**

Trust the SITRANS FM520, FM320, MAG 5100W, MAG 3100 and MAG 8000 for proven accuracy in non-standard pipe configurations.

[usa.siemens.com/mag](http://usa.siemens.com/mag)



The SITRANS FM520, FM320, MAG 520, MAG 5100W, MAG 3100 and MAG 8000 electromagnetic sensors from Siemens rise to virtually any challenge faced in the measurement of water and wastewater.

The FM520, FM320, MAG 5100W and MAG 3100 are traditional externally powered electromagnetic flow meters designed for conductive liquid applications. The MAG 8000 is ideal for applications where external power is not available, such as remote pumping stations and field irrigation.

Designed for highly accurate measurement in low-flow conditions, these meters also stand up to direct burial, constant flooding and the wide range of harsh chemicals found in water based applications in many different industries.

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# Performance Results

## Results

A reference test was first conducted by installing the FM520/MAG 5100W, FM320, MAG 3100 and MAG 8000 as recommended by Siemens for the best possible performance, with 5D upstream pipe and 3D downstream pipe from the sensor. The meters were then tested in configurations that do not meet the suggested installation conditions. The results were consistent enough to allow acceptance by an independent agency to allow meters with these installation variations to provide an accuracy of 0.6% even with zero diameters upstream and downstream of straight run pipe.



SITRANS FM520 /FM320



SITRANS MAG 8000

SITRANS MAG 5100W  
MAG 3100

A series of tests were conducted through a globally accredited independent approval body, which confirmed that the FM520, FM320, MAG 5100W, MAG 3100 and MAG 8000 are capable of exceptional accuracy even in non-standard configurations with an insufficient straight run of pipe. Based on its demonstrated ability to perform in non-ideal conditions, the FM520, FM320, MAG 5100W, MAG 3100 and MAG 8000 can provide 0.6% accuracy in installations with zero diameter upstream and zero diameter downstream straight run pipe from the sensor. The only exception is the presence of a partially opened control valve. In that case standard straight run recommendations must be followed.

This makes them a great choice for installations where other meters can't perform due to the lack of sufficient straight runs in approach and retreat piping.

The bottom line: no matter how demanding your magmeter installation may be, you can rely on the FM520, FM320, MAG 5100W, MAG 3100 and MAG 8000 to get the job done right.

There is no substitution for installing a flow meter following the guidelines for optimal performance. However, with a homogeneous fluid, when the optimal mechanical piping conditions don't exist or when the modification of the process piping is cost prohibitive, the ability to mount a meter in less than optimal conditions can offset the reduction in performance to 0.6%.

SITRANS FM520, FM320, MAG 5100W, MAG 3100 and MAG 8000 have been independently confirmed to operate in a variety of non-optimal piping arrangements and still provide acceptable accuracy while maintaining their exceptional repeatability specification.

Other flow technologies, both solid state (no moving parts) and mechanical (moving parts) require upwards of 50 diameters upstream and 20 diameters downstream in order to operate within the same performance levels as the Siemens SITRANS FM520, FM320, MAG 5100W, MAG 3100 and MAG 8000 with zero up and downstream straight runs of piping.

When you look at which product to select when you don't have the ideal installation capability, consider the use of Siemens FM520, FM320, MAG 5100W, MAG 3100 and MAG 8000 versus the cost of major modifications to your process piping.

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