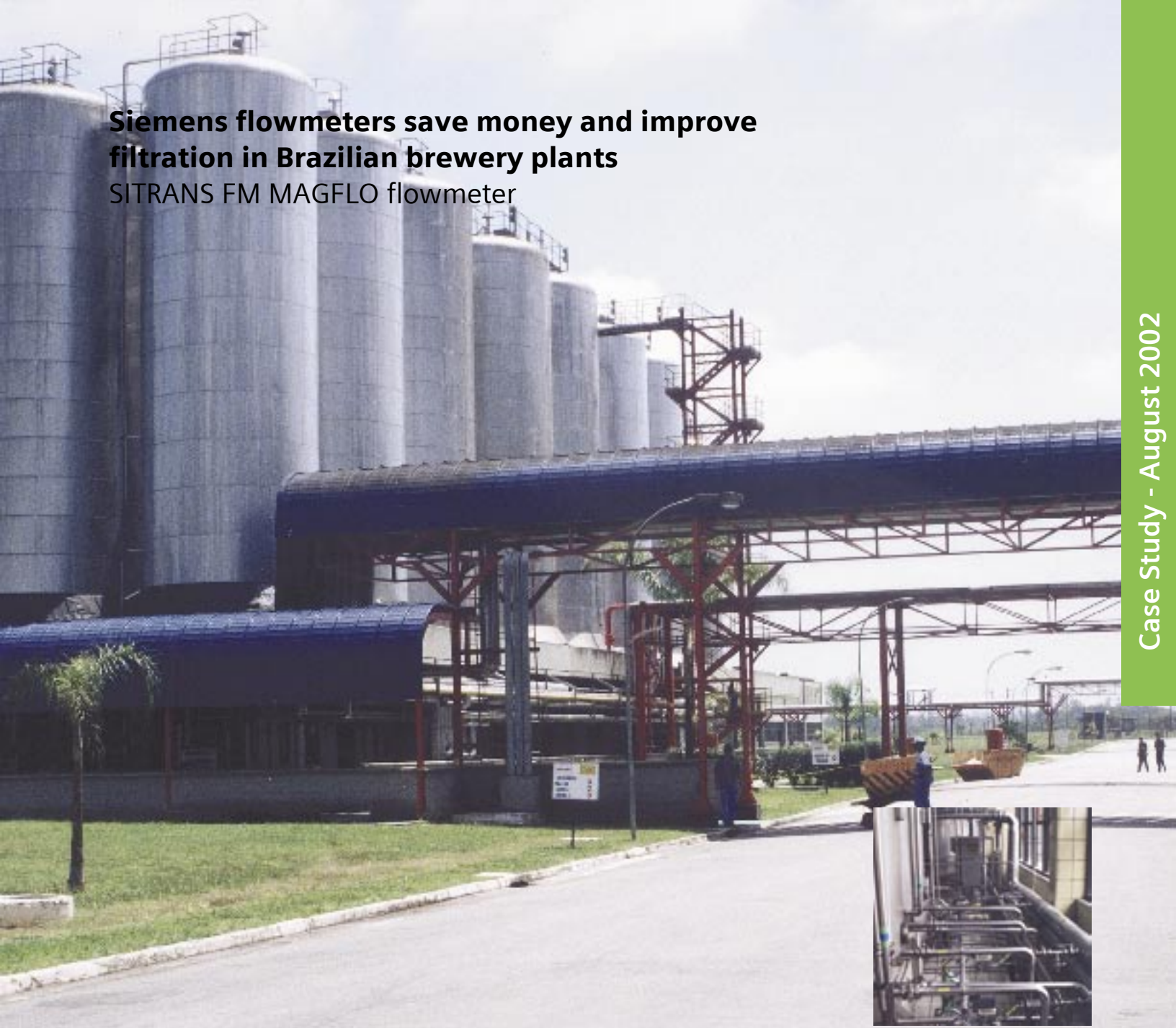


**Siemens flowmeters save money and improve filtration in Brazilian brewery plants**  
SITRANS FM MAGFLO flowmeter

Case Study - August 2002



# food & beverage

Using SITRANS FM MAGFLO flowmeter for dosing additives, a number of AmBev production facilities have taken leave of human errors in a vital process.

**SIEMENS**

### The challenge

“We were in the hands of operators”.

This is how AmBev brewmaster, Vicente Fioroto, describes the situation until recently as regards the dosing of additives in a range of the South American brewery giant’s production facilities throughout Brazil.

The additives concerned are used in the filtration process for quality reasons, and they are:

- Ascorbic acid solution for antioxidation. The additive enables AmBev to guarantee six months shelf life of the beer.
- Foam stabilizer, added to protect the foam from fat after the beer has left the packaging. In this case the quality aspect is merely visual, yet vital to the product image.

Until November 2000 these critical functions were controlled manually with piston pumps, adjusted by operators via a micrometer. The result was checked in a laboratory, and at the mercy of human imperfection errors would occur.

“Sometimes the liquids were not added, at other times they were added when there was no beer in the tank. This could force us to repeat the filtration process or mix the contents of a tank with other batches”, Mr. Fioroto explains.

### The solution

To overcome these drawbacks it was decided to install Siemens MAGFLO flowmeters to control the dosing of the two additives. Installation was carried out in the second largest plant of the group in Jacarei, close to Sao Paulo, in November 2000, followed by another eight Brazilian plants and one in Paraguay soon after.

Due to the automation, dosing of additives is now controlled according to the varying beer flow. The results have been most satisfying, not least thanks to substantial savings on the consumption of additives. The antioxidant makes up a good example:

### The benefit

Before the introduction of flow control, the consumption of antioxidation solution was 4.8 g/hl. Today the consumption has been reduced to 3.5 g/hl (27 percent less). At an annual output of approx. 9 million hectolitres the 1.3 g/hl reduction saves 11,700 kilos of antioxidation solution. At a price of 7 USD per kilo the total yearly savings are 85,100 USD – in the Jacarei plant alone.

In addition to this tangible benefit, a range of improvements regarding quality and operation was obtained, Mr. Joao Luiz, maintenance manager in Jacarei, tells.

“Earlier we frequently had to deal with varying quality in the tanks. Now we obtain a highly homogenous product. Moreover, monitoring of the pumps, performed by the flowmeters, has reduced maintenance to a matter of changing the pump hoses every 4-5 months. That has done a lot of good to downtime”, he notes and sums up the benefits of the automated filtration as follows:

- Money saved
- The human factor reduced
- Homogeneity and thus quality improved
- Maintenance decreased



Part of the filtration plant with MAGFLO sensors installed, measuring antioxidant and foam stabilizer.



### Why Siemens Flow Instruments

All through the stages of the automation process, the AmBev experts have benefited by a comprehensive backup from Siemens Flow Instruments, starting out with preinstallation counselling.

“In the planning- and layout phase we often called Siemens Flow Instruments to avoid problems, e.g. asking questions about application details. And we had advice that was obviously based on experience”, Mr. Fioroto states.

Installing the first system at Jacarei caused some trouble due to an accidental mistake, Mr. Luiz recalls:

“We were working very late in the evening, and we had to get some help. So we called Siemens Flow Instruments, and Ulysses Bordini Jr showed up soon after and solved the problem. It was definitely after midnight before he left”. When the system was ready to run, Mr. Bordini Jr returned to validate the installation and configuration – a procedure that was repeated after each of the next four systems (stepwise installation for minimum disturbance of production in the high season). Moreover he gave the necessary training.

The reason to choose Siemens Flow Instruments in the first place was recommendations from colleagues.

“They were not in doubt, even though the price is slightly higher. But you should not only judge by the purchasing price. It is the cost of ownership that matters”, Mr. Fioroto emphasizes.

### Optimizing Operation With MAGFLO Verificator

In addition to using verifictor from Siemens, AmBev in 2002 will start using the MAGFLO Verificator for verifying the meters once a year – as a part of the group’s corporate policy to optimize operation in all phases of production.

The Verificator has the ability to verify on-line deviations from original factory settings without interrupting actual

flow or interfering with the meter wiring. Information from up to 20 electromagnetic flowmeters can be stored in the unit before downloading to the network pc is necessary.

“One meter is done in 30 minutes, which makes one day plenty of time for our 10 meters,” maintenance manager Mr Joao Luiz notes, calling attention to the only alternate solution: shipping meters off for verification, taking no less than a week.



Brewmaster Vicente Fioroto and maintenance manager Joao Luiz with transmitters for four of the MAGFLO sensors controlling the dosing of additives in the filtration process.



A close-up on the transmitter conveying data from the flow sensors. Two of them control the dosing of antioxidant, while the other two control the addition of foam stabilizer.