

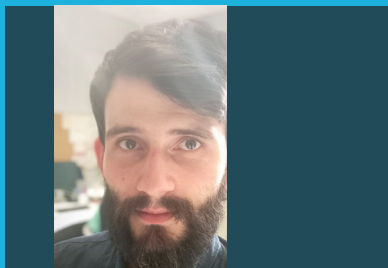


FLOW MEASUREMENT AND VERIFICATION OF FLOW DIRECTION



Chemical Industry

„Thanks to the flowmeter from Flexim with its acoustic permanent coupling, I didn't have to carry out a single maintenance service in over a year of use – in contrast to the old flowmeter, which regularly required new coupling grease.“



*Paul SAURA,
Maintenance Technician Central
Services,
ALSACHIMIE*



Measuring Task

Flow measurement and verification of flow direction on a liquid MGN transfer line between the jetty and the storage tank.

In its production, ALSACHIMIE uses MGN (2-methylglutaronitrile), a colourless, but toxic and strong foul-smelling liquid. This product is both sourced from a jetty on the edge of the factory and exported.

A flow measurement is required to ensure the functionality of the pump, to determine the quantity of product purchased or exported and to check the direction of flow – from storage tank to tanker or vice versa. All information is transferred to the process control system and used for process control.

A non-intrusive ultrasonic flowmeter from another manufacturer had been installed in the main line for several years. However, since the transducers were unprotected and exposed to the weather and the acoustic coupling consisted only of fat, the measurement often failed because the ultrasound was no longer able to penetrate the line. In fact, the coupling fat can be washed out by rain or dry out in the heat, both of which affect the measurement.

The maintenance technicians regularly had to intervene spontaneously

during a filling process with a maintenance job. Since the line is empty most of the time, the failure of the measurement can only be noticed if it is filled with MGN during a loading or unloading process. Tanker loading or unloading can take place at any time of the day and any day of the week. Therefore, the plant operators were looking for a more reliable measurement technology to be able to avoid these time-consuming maintenance calls.



Solution

ALSACHIMIE then turned to Flexim to have a new ultrasonic flowmeter delivered and commissioned, which has the advantage of not requiring any maintenance.

In fact, the acoustic coupling of Flexim's flowmeters is done by permanent coupling pads made of Viton, a material that has a very good resistance to temperatures and corrosive environments. A practically indestructible mounting rail made of stainless steel ensures permanently stable attachment of the transducers to the pipeline which is securely protected against impact and the adversities of the weather under a solid cover.

The users at ALSACHIMIE are extremely satisfied because the new flowmeter from Flexim fulfills its purpose perfectly: After more than a year in use, no maintenance was required, even though the measuring system was installed outdoors and exposed to the weather. Once again, the measuring systems from Flexim, which are designed for easy commissioning, maintenance-free and perfect adaptation to the harsh industrial environment, make the everyday work of their users easier by helping them save time.



Aerial view of Chalampé Chemical Park, headquarters of ALSACHIMIE
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The high-maintenance previous measuring device



The new flow measuring point with the stationary FLUXUS® F721 measuring transmitter in the foreground and the ultrasonic transducers mounted in the Variofix C in the background

Measuring Points and Instrumentation

Medium	MGN (2- methylglutaronitrile)
Temperature	~ 70 °F
Pipe diameter	8"
Pipe wall thickness	0.2"
Pipe material	steel

1 stationary FLUXUS® F721 ultrasonic flowmeter
1 pair of CDP clamp-on ultrasonic transducers, installed in a Variofix C transducer mounting rail

Advantages

- Easy to attach to the outside of the pipeline, no maintenance required thanks to the use of Viton permanent coupling pads under the transducers instead of organic grease.
- Permanent solution: The measuring system does not require any preventive maintenance.
- Simple commissioning: An experienced technician from Flexim installed the measuring system and carried out the commissioning within half a day. Despite the existing steam trace heating, no modifications to the pipeline were required.

Customer

ALSACHIMIE, Chalampé Chemical Park, France

ALSACHIMIE specialises in the production of nylon salt and its intermediates, which are required for the production of polyamide 6-6. These products are used in many areas of application, e.g. in the automotive, textile, electrical, and consumer goods industries as well as for the production of industrial and high-performance plastic fibers.

ALSACHIMIE is based in Chalampé in Alsace. More than 650 employees work at the site, which operates around the clock, 7 days a week, 365 days a year.



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